PARTICIPATION FOR EMPOWERMENT: AN ANALYSIS OF AGRICULTURAL INNOVATION IN TWO CONTRASTING SETTINGS OF BOLIVIA

VIVIAN DEL CARMEN POLAR FUNEZ

Thesis Submitted for the degree of

Doctor of Philosophy

2013

Centre for Development, Environment and Policy

Department of Financial and Management Studies

School of Oriental and African Studies

University of London

Declaration of own work

I have read and understood regulation 17.9 of the Regulations for students of the School of Oriental and African Studies concerning plagiarism. I undertake that all the material presented for examination is my own work and has not been written for me, in whole or in part, by any other person. I also undertake that any quotation or paraphrase from the published or unpublished work of another person has been duly acknowledged in the work that I present for examination.

Candidate's signature: 

Name of Ph.D. candidate: Vivian del Carmen Polar Funez

Name of supervisor: Dr. Nigel Poole

Abstract

This thesis is about the relation between participation and empowerment in two different contexts of the agricultural sector in Bolivia. It analyses the effects of a specific participatory method implemented along with technology innovation projects and depicts changes produced after a 2 year period among participating and non-participating farmers. The culture and history of the two contrasting sites – North Potosí and the Chaco regions - are analysed to evaluate their association with outcomes of the participatory implementation and changes in the sense of empowerment and asset-based components. Quantitative and qualitative methods were used to identify changes in the sense of empowerment experienced by farmers, as well as changes in structure and agency evaluated through a series of asset-based components and cultural practices.

Results from the study show that participatory processes were not empowering for project participants. Farmers who participated in the innovation projects with the participatory component had different perceptions of empowerment, and experienced different changes in structure and agency variables, in comparison to farmers who did not participate. Perceptions of empowerment and changes in structure and agency also varied when agriculture and market issues are analysed separately. Different types of power were manifested in different ways through agency, structure, history and culture in each study site. Cultural and historic background acted as an overarching framework affecting both participating and non-participating farmers in their sense of empowerment and the changes experienced in agency and structure. The nature and dynamics of the observed changes are used to introduce a new approach that explains how participatory processes create a "need" or a gap of dissatisfaction when economic, social and political structures restrict participation in decision making. Based on this theory, further avenues of research are explored and new research questions posed to foster deeper understanding of the dynamics of participation, empowerment and development.

Key words: Power, empowerment, participation, agricultural innovation, agency, structure, Bolivian agrarian history, critical consciousness

DEDICATION

To my daughters Mariana and Avril: for being a source of inspiration, and for happily sharing new life experiences despite difficult situations.

To my son Ican who was born during the last stages of this research for giving me comfort and strength.

To my dearest husband Luis for his loving support and confidence in my professional growth.

To my parents Walter and Justina, for always encouraging me to follow new challenges.

In memory of my sons Bruno († 29/10/2007) and Ariel († 25/05/2009)

A man's mind, once stretched by a new idea, never regains its original dimensions. (Oliver Wendell Holmes)

Acknowledgements

This research emerged out of Cambio Andino's interest in understanding the dynamics of participatory methods and their potential contribution to pro-poor technology innovation systems in the agricultural sector. It was part of Cambio Andino's research agenda in Bolivia and sought to foster the understanding of how participatory methods evolve in different contexts in order to contribute to the design of more efficient research and development interventions.

I would first like to thank my supervisor Dr. Nigel Poole. Thank you Nigel for your patience, for your continuous encouragement and for helping me grow out of structural limitations and into a world of questions with infinite possibilities. I would also like to thank Dr. Frauke Urban for all of her comments and suggestions to the different chapters and drafts of this thesis.

I would also like to deeply thank the International Center for Tropical Agriculture (CIAT) and the International Potato Center (CIP) for the financial support provided within the framework of Cambio Andino. I would particularly like to thank Dr. Jacqueline Ashby who supported me during the first stages of the research, sharing with me her vast research experience. Thank you Jacqui for your friendship and unconditional support. A special thank you to Dr. Graham Thiele, for his follow up and concern during difficult times.

The final writing up phase of this thesis would not have been possible without the financial support of The McKnight Foundation who took over funding when Cambio Andino's second phase was discontinued by DfID. Special thanks to all of the McKnight foundation and particularly to Dr. Carlos Perez and Dr. Claire Nicklin for their commitment to strengthening local institutions and developing human resources in Bolivia.

I would also like thank my colleagues at PROINPA Foundation in Bolivia. Special thanks to Dr. Antonio Gandarillas, Dr. Edson Gandarillas and Eng. Wilfredo Rojas for their support and confidence in my professional development.

The fieldwork operation of this thesis would not have been possible without the support of all of the Cambio Andino team in Bolivia. A particular thank you to: Walter Fuentes and Juan Fernandez for their outstanding support throughout field implementation. Hereafter thanks to Cecilia Figueroa, Alex Durán and Rosemary Villanueva who assisted me with data

collection in Bolivia. Their field experience was invaluable throughout the difficult field conditions we encountered.

A special thanks to the implementing partners of Cambio Andino's pilot cases in Bolivia. Particularly to PRODII in North Potosí, the Continuous Innovation Program of COSUDE in Chaco and PROINPA Foundation. Their support for field logistics and provision of information was invaluable throughout the research.

Finally, I would like to thank all of the farmer families who participated in the research. They invested time and energy sharing information about their perceptions and experiences.

Table of Contents

Index of Figures

Index of Tables

Index of Pictures

Acronyms

ASOPROMANI ------ Asociación de Productores de Maní (Groundnuts Producer Association)

CAD ---------- Centro de Apoyo al Desarrollo (Development Support Centre)

CIAL ---------- Comité de Investigación Agrícola Local (Local Agricultural Research Committee)

CIAT ---------- Centro Internacional de Agricultura Tropical (International Center for Tropical Agriculture)

CIDOB ---------- Confederación de Pueblos Indígenas de Bolivia (Confederation of Indigenous Peoples of Bolivia)

CIMMYT ---------- Centro Internacional de Mejoramiento de Maíz y Trigo (International Maize and Wheat Improvement Centre)

CIP ---------- Centro Internacional de la Papa (International Potato Center)

CONAMAQ ---------- Consejo Nacional de Ayllus y Markas del Qullasuyu (National Council of Ayllus and Markas of the Qullasuyu)

COSUDE ---------- Cooperación Suiza para el Desarrollo (Swiss Agency for Development and Cooperation)

DfID ---------- Department for International Development

EMPODERAR ------- Emprendimientos Organizados para el Desarrollo Rural Autogestionado (Organized Initiatives for Self-managed Rural Development)

ETI ---------- Euro Telecom International

FAOI-NP ---------- Federación de Ayllus Indígenas Originarios del Norte de Potosí (Federation of Native Indigenous Ayllus of North Potosí)

FSUTCB ---------- Federación Sindical Única de Trabajadores Campesinos de Bolivia (Bolivian Trade Union Federation of Peasant Workers)

FSUTCT ---------- Federación Sindical Única de Trabajadores Campesinos de Tarija (Trade Union Federation of Peasant Workers from Tarija)

IICA ---------- Inter-American Institute of Cooperation for Agriculture

IBRD ---------- International Bank for Reconstruction and Development (World Bank)

IBTA----------Instituto Boliviano de Tecnología Agropecuaria (Bolivian Institute for Agricultural Technology)

INIAF----------Instituto Nacional de Investigación Agrícola y Forestal (National Institute for Agricultural and Forestry Reseach)

MDRAyMA ----------Ministerio de Desarrollo Rural, Agricultura y Medio Ambiente (Ministry of rural Development, Agriculture and Environment)

M&E ----------Monitoring and Evaluation

NGO ----------Non-Government Organization

OTB ----------Organización Territorial de Base (Territorial Base Organization)

PISA----------Proyecto de Innovación y Servicios Agrícolas (Agricultural Innovation and Services Project)

PM&E ----------Participatory Monitoring and Evaluation

PMCA----------Participatory Market Chain Approach

PND----------Plan Nacional de Desarrollo (National Development Plan)

PRODII ----------Programa de Desarrollo Integral Interdisciplinario (Integral Interdisciplinary Development Program)

PROINPA----------Fundación para la Promoción e Investigación en Productos Andinos (Foundation for the Promotion and Research in Andean Products)

PROMyM ----------Programa de Maíz y Maní (Maize and Groundnuts Program)

PSA----------Programa de Servicios Agrícolas (Agricultural Services Program)

RRA ----------Rapid Rural Appraisal

SAMAPA ----------Servicio Autónomo Municipaproinpl de Agua Potable y Alcantarillado (Autonomous Municipal Water and Sewage Service -From La Paz)

SEMAPA ----------Servicio Municipal de Agua Potable y Alcantarillado (Municipal Water and Sewage Service -From Cochabamba)

SENASAG ----------Servicio Nacional de Sanidad Agropecuaria (National Service for Agricultural Health and Safety)

SEP----------Seguimiento y Evaluación Participativa (Participatory Monitoring and Evaluation)

SIB----------Sistema Boliviano de Innovación (Bolivian Innovation System)

SIBTA ----------Sistema Boliviano de Tecnología Agrícola (Bolivian System of Agricultural Technology)

USC Canada---------Unitarian Service Committee of Canada

WB ----------World Bank

Chapter 1. INTRODUCTION

This thesis is about empowerment and its relation to the implementation of participative development methodologies in a context of agricultural technology innovation in Bolivia. It seeks to foster the understanding of how participation relates to empowerment in different contexts. It emerges out of new government policies in Bolivia that seek to promote participation as an empowerment tool to enhance technology innovation and development.

Researchers and development practitioners, including myself, continuously face the challenge of influencing policy makers to include some results and findings in the design of new policies to promote technology innovation, development and poverty alleviation. As a practitioner of research and development in the agricultural sector of Bolivia for more than 15 years, to see the inclusion of these approaches in national policies to promote empowerment and development in the agricultural sector was a great challenge. The enactment of the new policy brought about several questions for practitioners. This thesis was designed to address in depth only a small section of the broad spectrum of questions that emerged around participatory methods, technology innovation and empowerment in Bolivia. It seeks to foster the understanding of how participation, specifically through Participatory Monitoring and Evaluation, relates to empowerment in environmentally, culturally and historically different contexts.

To describe the problem, the first sections of this introductory chapter will present a general background on how and why the policy on "participation in the agricultural sector" was enacted, supported by a general historic background of policies for research and development in the agricultural sector of Bolivia, and a background of the current policies and frameworks for the agricultural sector. Next, the research questions will be presented along with a general background of the conceptual framework considered for the study and my personal position as a research and development practitioner in Bolivia. Finally the structure of the thesis will be presented.

1.1 Bolivia in a social transformation process

The Plurinational State of Bolivia is the country with the highest proportion of indigenous population in Latin America, with high diversity of cultures and indigenous groups and with the highest poverty and inequality indicators in the region. According to the national Bolivian Census of 2001, 66.2% of the Bolivian Population was classified as indigenous out of their ethno-linguistic background[1] (Del Popolo et al., 2006). These indigenous peoples belong to 36 groups and nations aggregated and represented by "The Confederation of Indigenous Peoples of Bolivia" CIDOB[2] and the "National Council of Ayllus[3] and Markas[4] of the Qullasuyo[5]" CONAMAQ[6](CIDOB, 2007, Liendo, 2009). This widely diverse state is highly unequal with a Gini coefficient of income distribution of about 0.57 in 2009, among the highest in Latin American Countries, where 10% of the population holds 45.4% of the total national income (World Bank, 2011a). This state of inequality is evidenced through significant disparities in assets, household size and income gaps by gender, ethnicity, location and employment type. Furthermore, the country ranks among the worst in the region in malnutrition, maternal and infant mortality rates, and is off track to meet the MDG of universal completion of basic education (Arias and Bendini, 2006).

During the period between 1995 and 2005 the combination of ethnic and historic background of the population, and the high levels of poverty and inequality, have nurtured a social transformation process that exercised deep and continuous pressure over government structures. This process is led by social organizations that mobilize throughout the country, seeking to find true representation and to be heard by decision makers in a call for equity and poverty alleviation.

[1] The ethno-linguistic background was determined through the fulfilment of three conditions: self-determination as indigenous, having a native language as mother tongue and speaking of a native language.
[2] Spanish acronym for "Confederación de Pueblos Indígenas de Bolivia" that groups 34 indigenous groups of the lowlands of Bolivia.
[3] Quechua word that refers to the aggregation of communities. It was the building block of society and the state for the Incas and nowadays for the Quechua Nation within the Plurinational State of Bolivia.
[4] Aymara Word that refers to a form of organization that aggregates and represents groups of communities in a certain geographic area. The aggregation of Markas forms the Aymara Nation that existed before the Inca Empire and is currently part of the Plurinational State of Bolivia.
[5] Translated from Aymara as "the land of the Qullas". It was the largest and southernmost territory of the Inca Empire, comprising the high plains around Lake Titicaca in both Perú and Bolivia.
[6] Spanish acronym for "Consejo Nacional de Ayllus y Markas del Qullasuyu" that groups the Aymara and Quechua nations of the Bolivian Highlands.

After changing three presidents in less than three years, this process reached a turning point during the first few months of 2006 when, for the first time in history, someone who defined himself as an indigenous person was elected to the first office (Klein, 2011). Mr. Juan Evo Morales Aima, head of a coca producing farmer union, was driven to office by the support of more than half of the national voting population. The election of Morales has brought about a radical transformation process that includes a major introduction of indigenous and mestizo political leaders into positions of power in the government, a significant move away from the United States' sphere of influence, and renationalization of formerly privatized government companies; thus strengthening the state as a dominant player in the country's economy. Furthermore the Morales office pushed strongly for a new constitution that was written after strong debates in 2007and 2008, approved through national referendum in 2009 (The Political Scene, 2009), and set into full effect in 2010 (Klein, 2011). The new constitution renamed Bolivia as "Plurinational State of Bolivia" and set the framework for the operation of a decentralized state that guarantees all the traditional rights of the indigenous community governments.

The highly debated transformation process started by Morales was strongly supported by the population in the first few years. The income generated by the new nationalized companies enabled the expansion of welfare programs based on income transfer, thus enhancing government popularity. Yet popularity has been declining during the last two years mainly because the deeply segmented and diverse population requires government policies that respond to their wide range of demands (Country Report: Bolivia, 2007, The Political Scene, 2011). The challenge at present is to find mechanisms to effectively transmit the voice and will of the people to decision making levels; respecting as is commanded by the new constitution, traditions and cultural practices which are deeply rooted all over the country, thus strengthening government structures that have been strongly questioned and made unstable over time.

1.2 The current Bolivian National Development Plan and the Agricultural Sector

In response to the equity calls of the population the new government lead by Mr. Morales Aima produced the new "Plan Nacional de Desarrollo: Bolivia Digna, Soberana y

Democrática para Vivir Bien"[7] that pursues the reduction of poverty, inequality and social exclusion and the improvement of well-being for all Bolivians. The PND[8] sets the framework for a new development pattern in Bolivia. The plan addresses development over four philosophical pillars or components named: Dignity, Democracy, Productivity and Sovereignty. Each component focuses on specific areas: Dignity addresses Social and Community aspects focusing on development with social inclusion; Democracy deals mainly with decentralization and community social power; Productivity attends the transformation of the productive processes, industrialization and export and; Sovereignty concentrates on changes in the framework of international relations. Each component implies a specific strategy based on the deconstruction of the former colonial state and the reconstruction of a multinational and communal Bolivia. The PND highlights innovation and technology development as a means to achieve higher productivity, competitiveness and food sovereignty. It specifically considers the transformation of rural production through research, identification and validation of indigenous technologies; the appropriation of external technologies and the participatory development of technology through participatory tools such as learning by practice, farmer field schools and the farmer to farmer approach, among others (Government of Bolivia, 2006). The philosophy and principles that guided the design of the PND led to the formation of a Bolivian Innovation System SBI[9] to articulate science and technology to this transforming state.

1.3 Research and Development Systems in Bolivia: a history of instability

Institutional development for agricultural research in Bolivia began to develop within the Ministry of Colonization and Agriculture established in 1904, as project to explore and discover natural resources (Cardozo, 1971). Yet the first accounts of a true institutional framework date back to 1937 when the Ministry of Colonization and Agriculture created the first Experimental Farms (Ortega C. and Rivas V., 2004). Before this the Bolivian government did virtually nothing about agricultural development (Mosher, 1957). Landed estates hindered technology innovation by discouraging rural education and the adoption of new technologies by servants, mainly because taxes were levied on production rather

[7] It can be translated as "National Development Plan: Bolivia Worthy, Sovereign and Democratic to Live Well". The concept of "live well" is inspired in the Andean World Vision and is based in the principles of equity and reciprocity. The term reflects the fact that people do not want to live better than anyone or anything but well, all together.
[8] Spanish acronym for "Plan Nacional de Desarrollo"
[9] Spanish acronym for "Sistema Boliviano de Innovación"

than on land and they had access to cheap labour (Godoy, 1993). Yet after the Chaco War between Bolivia and Paraguay (1933 – 1935), the monetary devaluations caused extreme social unrest and strikes shook the countries stability (Lora, 1970a). After losing the Chaco territory thought to be rich in oil reserves, a sense of nationalism flourished and governments sought to take true control over natural resources. The Ministry of Colonization and Agriculture was created with this purpose and the governments of General David Toro (1936 – 1937)[10] and Lieutenant Colonel German Busch (1937 – 1939)[11] wanted to explore and strengthen government presence in the country's different regions.

1.3.1 The 1942 Bohan Plan

In 1940 during the government of General Enrique Peñaranda (1940 - 1943)[12] the third Ministry of Agriculture was established and plans to advance agriculture began. It was during this period that the United States courted Bolivia with money and technical assistance to enlist Bolivia's cooperation in meeting the abnormal demand created by World War II for strategic minerals and crops (Godoy, 1993). For this purpose the US Department of State in 1940 selected a task force headed by Merwin L. Bohan to formulate an aid plan for Bolivia. This document is known today as the Bohan Plan and proposed to bring agriculture centre stage as a resource to promote development in Bolivia. The plan suggested structuring a research network that emulated the "Land Grant Colleges" that linked farmers with Colleges, Universities and other public research institutions of the United States (Trigo et al., 1983). The suggested network should be based in Cochabamba with the expertise and support of the San Simon University that was at the time the only one providing instruction in agriculture in Bolivia. In parallel it proposed the creation of several stations located in different ecological regions of the country, in order to have specialized research for different commodities in different areas. The Bohan Plan also recommended institutional arrangements such as competitive recruitment, adequate

[10] D. Toro's office was the beginning of nationalist governments in Bolivia that attempted to foster control over natural resources and implement legislation in favour of labour organizations. (LORA, G. 1970b. *Historia del Movimiento Obrero Boliviano (1933 - 1952),* La Paz, Los Amigos del Libro, MESA G., C. D. 1983. *Presidentes de Bolivia: entre urnas y fusiles,* La Paz, Gisbert & Cia.; LORA, G. 1970b. *Historia del Movimiento Obrero Boliviano (1933 - 1952),* La Paz, Los Amigos del Libro.)
Toro's regime sets the begging of a movement called Military Socialism.

[11] G. Busch followed Toro's attempt to introduce social reforms and was considered a hero until he died presumably murdered while still in office. (LORA, G. 1970b. *Historia del Movimiento Obrero Boliviano (1933 - 1952),* La Paz, Los Amigos del Libro, MESA G., C. D. 1983. *Presidentes de Bolivia: entre urnas y fusiles,* La Paz, Gisbert & Cia.;)

[12] E. Peñaranda was driven to office by the support of the wealthy elites and turned its back on the nationalist ideas of his predecessors. (MESA G., C. D. 1983. *Presidentes de Bolivia: entre urnas y fusiles,* La Paz, Gisbert & Cia.)

compensation and capacity building in order to create a strong and stable system. In addition to these general research system proposals, the Bohan Plan also posed a series of elements for economic development and highlighted the need to increase production of several staple crops. To achieve this objective, the plan suggested a series of strategies that included the construction of roads, provision of services and other incentive measures to foster the development of the eastern Bolivian territories due to their higher agricultural potential (Bohan, 1942) the process is known today as the "Marcha al Oriente"[13].

After the formulation of the Bohan Plan, relations between Bolivia and the United States cooled mainly due to slow disbursement of funds by the U.S. and also due to the ambivalence of the current Bolivian government that gave limited credit to benefits of foreign assistance (Godoy, 1993). After the government of Peñaranda mainly supported by wealthy elites and traditional political parties, the adherence to the cooperation from the United States declined. With Lieutenant Colonel Gualberto Villarroel (1943 - 1946)[14] in office the nationalist ideas returned with vigour through the abolition of pongueaje[15] and the organization of the first indigenous congress[16] (Albó, 2008). Even though Villarroel was tragically murdered in 1946 and a conservative government was established, the nationalist seeds introduced by the war through the governments of Toro, Busch and Villarroel gradually evolved into more formal social movements that reached a turning point in the 1952 Revolution and the 1953 Land Reform.

1.3.2 The Inter-American Agricultural Service (SAI)

Almost a decade after the Bohan plan had been elaborated, some of its elements began implementation through the signature of an agreement between the Bolivian Government and the Inter-American Agricultural Service (SAI) financed by the US government (Cardozo, 1971). During the early 1950s the US supported Bolivia with financial aid and technical cooperation to prevent it from following undesirable political paths such as communism (Godoy, 1993). From the signature of this agreement in 1949 until 1966, 10 experimental stations and 4 demonstration centres were established (Ortega C. and Rivas V., 2004).

[13] Spanish expression that is translated as: "March to the East" and emulates the US efforts to develop the western states.

[14] Gualberto Villarroel was known as the "Father of the Indians", coming from a modest family in the valleys of Cochabamba he promoted strong social reforms. The wealthy elites promoted a violent popular riot that ended in his tragic death in 1946.

[15] It was a form of forced labour that was imposed on indigenous peoples. Indian tenants were obliged to give free domestic service to landlords.

[16] Villarroel organized the first indigenous congress where he addressed people in Quechua one of the native languages spoken in the valleys of Bolivia.

During this period of time the SAI became the most powerful institution in the agricultural sector downplaying other national institutions and thus orienting the national agrarian development policy (Cardozo, 1971). SAI was directed by American administrators and financed by the United States as a semi-autonomous institution servicing the Ministry of Agriculture. During this period of time many of the recommendations in the Bohan Plan were implemented and an innovation system that carried out research and delivered extension services was clearly visible.

After 1966 the Ministry of Agriculture maintained the structure developed by the SAI giving it the rank of ministerial division and creating two additional experimental stations. This central organization of experimental stations was enriched by the intervention of Universities that contribute to the maintenance of stations, sub-stations and research centres in Cochabamba, Santa Cruz, Oruro, Beni, Potosí, Sucre and Tarija (Cardozo, 1971). Furthermore, the Ministry transferred two moderately implemented Experimental Stations to the universities of Cochabamba and Beni, thus marking the beginning of university research and enabling the combination of research and teaching (Ortega C. and Rivas V., 2004).

1.3.3 1975 The Bolivian Institute of Agricultural Technology (IBTA)

In December 10th 1975 the Bolivian Institute of Agricultural Technology (IBTA) was created under Supreme Decree 13168. The creation of IBTA and the establishment of the Tropical Agriculture Research Centre CIAT[17] in 1976, in the Department of Santa Cruz; gave real impetus to agricultural research and technology transfer (Ortega C. and Rivas V., 2004). The institutional model adopted by IBTA delivered research and technology transfer that depended almost exclusively on financial support from the central government and this dependence made it financially and technically unstable in the face of the frequent government changes. Furthermore, one of the most observed and criticized issues was, the centralized way in which priorities were established; where research centres defined and set the path for research processes. In this model there was no room for active participation, knowledge sharing, demand identification or other types of interaction between researchers and potential technology end users, whether large, medium or small agricultural producers. In 1991 a $US 21 million World Bank project was approved, which

[17] Spanish Acronym for "Centro de Investigación Agrícola Tropical" that refers to a Bolivian centre and no to the CIAT based in Cali Colombia that is an international research centre part of the Consultative Group on International Agricucltural Research (CGIAR).

aimed at IBTA's capacity strengthening (Bojanic, 2001). As part of this reform process IBTA closed its extension service and attempted with limited success, to implement a system called 'pre-extension' that sought to link and coordinate with intermediate organizations on technology transfer (Gandarillas et al., 2007). Many of the ideas from the pre-extension system came from CIAT – SC (Thiele et al., 1998) but they did not flourish in the context of IBTA, although it did work in the framework of a specific program called PROINPA[18] (Gandarillas et al., 2007).

IBTA as an institutional model operated until 1995 when the creation of a new decentralized model began through the intervention of national and foreign technical staff, and the support of international cooperation such as the World Bank, the Inter-American Development Bank, the Swiss Development Cooperation, the United States Agency for International Development, and the Inter-American Institute of Cooperation for Agriculture IICA[19]. In 1997 IBTA was officially closed due to political instability factors that generated institutional instability and inefficiency in administration, and management of technical processes. The infrastructure of the experimental stations was transferred to local and regional governments. Among the many observations on its performance, Ortega highlights that IBTA was able to deliver basic, strategic, applied and adaptive research with significant contributions to the agricultural sector (Ortega C. and Rivas V., 2004), and in an extremely difficult and politically unstable environment.

1.3.4 2000 The Bolivian Agricultural Technology System SIBTA

In 2000, through the financial support of the Agricultural Services Program PSA[20] financed by the Inter-American Development Bank and the support of various foreign cooperation agencies, two programs for the sector began operating. One was the National Service for Agricultural Health and Safety SENASAG[21] and the other was the Bolivian Agricultural Technology System SIBTA[22] that attempted a shift from the dichotomized (research-extension) and state centralized model based on a network of experimental stations, to a competitive market-led decentralized model (Nuñez et al., 2003). By 2006 more than 135

[18] It is the Potatoes Research Program that later evolved into an NGO called Foundation for the Promotion and Research on Andean Products. It is this NGO that for several years delivered extension services in the highlands of Bolivia. One of the case studies in this research takes place on a project delivered by PROINPA in the Chaco region.
[19] Spanish Acronym for "Instituto Interamericano de Cooperación para la Agricultura".
[20] Spanish Acronym for "Programa de Servicios Agropecuarios"
[21] Spanish acronym for "Servicio Nacional de Sanidad e Inocuidad Agropecuaria"
[22] Spanish acronym for "Sistema Boliviano de Tecnología Agropecuaria"

agricultural research and technical assistance organizations were funded by SIBTA to deliver research and extension services in different regions of Bolivia (Lema et al., 2006).

1.3.5 2008 The National Agricultural and Forestry Research Institute

In 2007 the government abolished SIBTA to create the Bolivian System of Innovation, a more centralized model that would strengthen the government's role in the direct management of genetic resources and the delivery of long term research on priority crops, while at the same time improving the coordination among the different public and private actors that participate in innovation processes within the country. The operation of this model was led by the National Agricultural and Forestry Research Institute INIAF[23] and funded by the central government and the World Bank through the Agricultural Innovation and Services Project PISA[24] project approved in June (World Bank, 2011b). Although the central features of both INIAF and the PISA project have been designed, specific tools and processes to achieve the ultimate inclusion objectives are still under consideration.

The institutional evolution of the agricultural innovation system in Bolivia is marked by the different political shifts in governments. During the time that more conservative governments ruled there was support of the US, and formal research – extension services were established, while in more liberal or reformist governments these ideas were usually discarded for the sake of economic independence and sovereignty; nevertheless, specific institutional issues in agriculture were not addressed practically. The efforts made to establish and operate SIBTA were an attempt to promote a more market-led system to promote demand-led research and extension services. Beyond the successes and/or failures of the system and in a repetition of historic trends, pursuit of nationalist and reformist principles accelerated the closure of SIBTA and the design of a new form of organization called INIAF. Although framed by profound philosophical and political principles, the new institutional structure seeks as its predecessor to address poverty alleviation, development and inclusion.

[23] Spanish acronim for "Instituto Nacional de Investigación Agrícola y Forestal"
[24] Spanish acronym for "Proyecto de Innovación y Servicios Agrícolas"

1.4 The new institutional model and the suggested tools for inclusion

The new National Development Plan sets the framework for the operation of transformation processes to respond to the demands and needs of the population. Within the framework of the PND, the Ministry of Rural Development, Agriculture and Environment MDRAyMA[25] generated a Sector Development Plan to address three main objectives (Plurinational State of Bolivia, 2007): a) advance towards the country's food sovereignty, b) broaden the contribution of agricultural and forestry production to the livelihoods of the population and to the country's development, and c) impulse the sustainable use of natural resources. To achieve these objectives the MDRAyMA designed an institutional model for the operation of a strategy that would consider the multiple existing challenges.

Throughout the PND, the MDRAyMA Sector Plan and the INIAF 2011 – 2015 Strategic Plan, there is a common understanding of the need to focus on agricultural development through processes of revalorization of indigenous knowledge, technology innovation and empowerment that strengthens the role of communities and organizations at the local level. The use of participatory methods is highlighted continuously for they are considered as tools that will enable both empowerment and technology innovation. The assumptions that led to such formulation are in this case that participatory methods and tools promote the identification and revalidation of indigenous knowledge and the development of local innovation that responds more adequately to the needs of the poor. Furthermore, it is assumed that through the use of these methods organizations, groups and individuals are empowered and will exercise this empowerment to guide development as a whole and ultimately achieve wellbeing.

The assumption that participation contributes to empowerment is yet to be confirmed and analysed in-depth to determine how particular methods affect empowerment. This analysis can be a useful contribution to the development and/or adjustment of participatory processes set to achieve the empowerment assumption embedded in development policies for productivity in the agricultural and livestock sector.

[25] Spanish acronym for " Ministerio de Desarrollo Rural, Agricultura y Medio Ambiente"

1.5 Research questions and the main conceptual framework

To understand how participation and empowerment relate to each other under environmentally, culturally and historically different contexts, a specific participatory method was considered for the analysis. This method was a variant of Participatory Monitoring and Evaluation PM&E, specifically adapted to the Bolivian context and promoted in previous years (See section 3.8). To differentiate the variant method from general PM&E approaches the Spanish acronym SEP[26] will be used throughout the thesis. Three specific research questions were proposed to guide the analysis:

- How does the exercise of participation through SEP affect the sense of empowerment within the agricultural technology innovation sector, in two contrasting sites of Bolivia?
- What is the effect of participation through SEP on structure and agency as components of empowerment within the agricultural technology innovation sector, in two contrasting sites of Bolivia?
- How do culture and history affect the outcome of participatory processes on empowerment within the agricultural technology innovation sector, in two contrasting sites of Bolivia?

The analysis of these research questions was supported by a conceptual framework that considered a broad definition of power. It also used the asset-based components framework proposed by the World Bank through the research of different authors(Alsop et al., 2006, Alsop et al., 2005, Joyce and Lopiparo, 2005, Narayan-Parker, 2006), for the practical identification and analysis of variables. These asset-based components framework was incorporated in a practical analysis of society based on agency and structure, and later contrasted with findings on history and culture as elements of structure.

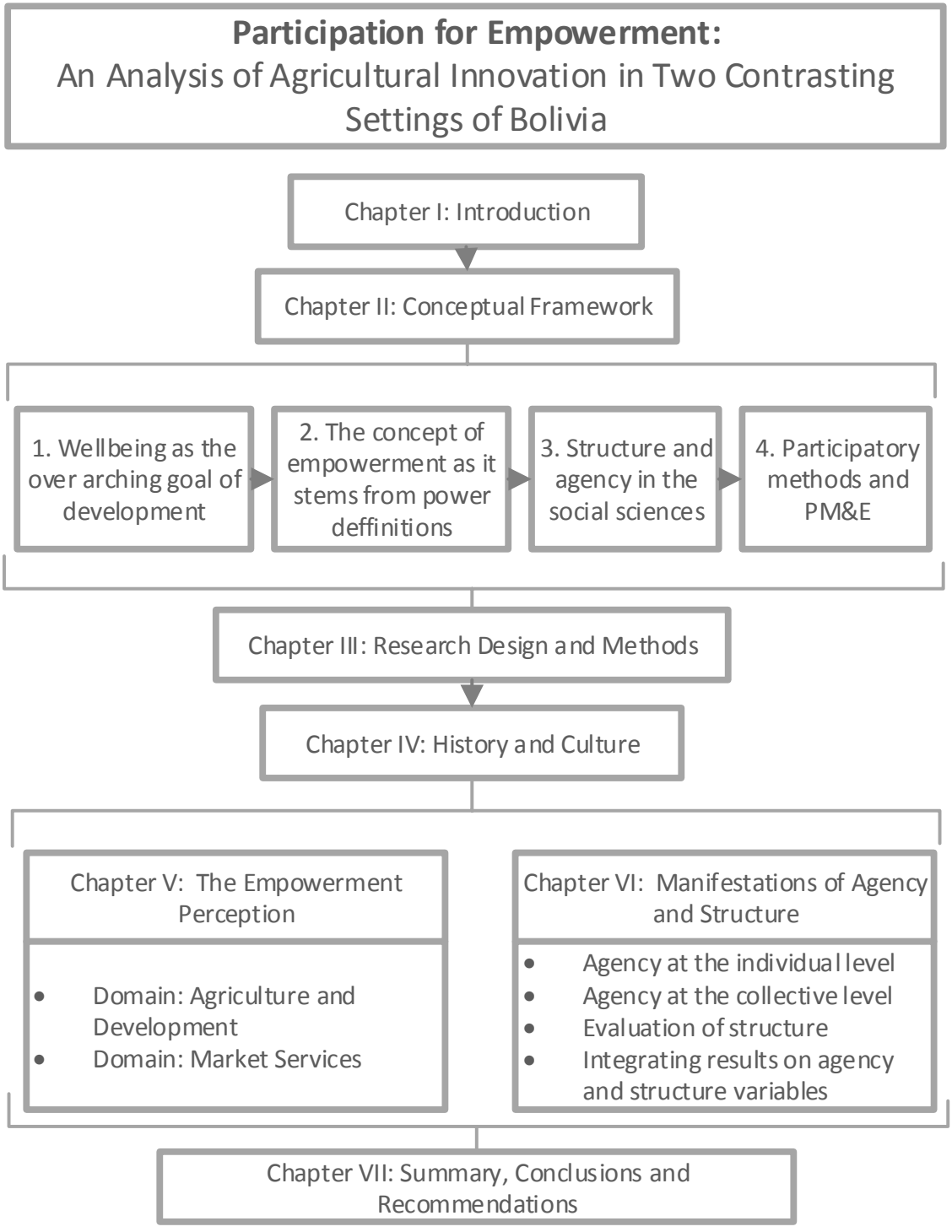
The design of this research was influenced by my personal position as a practitioner with more than 15 years of experience working for agricultural development in Bolivia and as scientist working for the Cambio Andino Program. As the National Coordinator of the Participatory Methods component in Bolivia for the Cambio Andino Program, I was directly involved in the implementation of participatory methods with partner institutions in Bolivia and the Andean Region. Ethical considerations regarding the influence of Cambio Andino's and my own interests on the research are outlined in Chapter 3.

[26] Seguimiento y Evaluación Participativa

1.6 Thesis Structure

The research developed here derives from the linear assumptions of participation – empowerment – technology innovation that has shaped part of the philosophy and principles of the PND, MDRAyMA Sector Plan and the INIAF Strategic Plan. It focuses particularly on PM&E as a process proposed by the MDRAyMA and analyses the contribution of a specific PM&E tool used for agricultural technology innovation processes in two contrasting regions of Bolivia. The study depicts the initial situation of communities in both contrasting sites, the process of implementation and the final outcome in terms of participation, empowerment and technology innovation. It also relates contextual variables such as history and culture with the results in every site, in order to identify potential issues that need to be considered for the design and adjustment of interventions that promote participation, empowerment and technology innovation in the future. The structure of the thesis is summarized in Figure 1.1.

Figure 1.1 Thesis structure, distribution of chapters and content



Following this introduction there is a conceptual framework development in Chapter II; exploring concepts of wellbeing, empowerment, structure, agency, history, culture and a framework to analyse and assess empowerment. The chapter also discusses Participatory Monitoring and Evaluation literature to foster an understanding of the contributions of the specific method to empowerment and technology innovation.

Chapter III presents a detail of the research design and methods used for data collection. It highlights the different changes that took place around the initial design until its final adjustment. The chapter also presents a detailed description of the specific participatory method subject to evaluation, and a general overview of current context in the study sites.

Chapter IV depicts context in depth, looks back at historic trends of power management in Bolivia and takes a close up analysis of these trends and their effect on the Chaco and North Potosí regions. Chapter V analyses the farmers' experience with participation, reflecting mainly on the perception expressed in both the agricultural and market sector. Chapter VI presents a detailed description of changes in variables of structure and agency and relates these changes to empowerment and processes of technology innovation promoted through the participatory intervention. Both chapters V and VI are illustrated and contrasted with results from historic and cultural trends identified in Chapter IV in order to identify historic factors that have effects on the outcomes of participation in terms of empowerment and technology innovation. Finally Chapter VII presents a set of conclusions that analyse both the results of the research and potential factors to be considered in the design and adaptation of future interventions to different contextual realities.

Chapter 2. CONCEPTUAL FRAMEWORK

This research is structured under five main conceptual bodies of theory. Initially we will explore wellbeing as an ultimate goal of development, highlighting different approaches to its understanding and emphasizing relevant trends to tackle development in the Andes. Secondly we will explore empowerment which in this particular piece of research is understood as a premise for the achievement of wellbeing. Empowerment will be analysed in the light of a broad power definition and an empowerment framework will be presented as the basis of analysis. Later we will analyse the concepts of Agency and Structure to understand their relation to empowerment and participation. Finally, participation will be addressed as it has evolved over time, and 'Participatory Monitoring and Evaluation PM&E' will be described as the specific focus of analysis in the study.

2.1 Wellbeing as the overarching goal of development

Development interventions ultimately seek to achieve the wellbeing of target populations, yet the concept of wellbeing can be understood from more than one standpoint. This section will explore the contemporary origin and usage of the term as well as the main streams of thought that have shaped its understanding. Furthermore, old and new lines of thinking will be examined to find convergence with Andean conceptions of wellbeing.

2.1.1 Contemporary origin of the concept of wellbeing

After the Second World War institutions were established to support the creation of liberal market economies and organize the political social and economic development of the world. The International Monetary Fund and the International Bank for Reconstruction and Development (IBRD or World Bank) started to provide financial support initially in Europe's post war reconstruction and later on expanded their support to the rest of the developing world. Their aim was to promote development and wellbeing through economic growth.

The concept of wellbeing was officially and legally introduced by the Universal Declaration of Human Rights in 1948. Following the post war reconstruction and stabilization strategies, in October 1945 the United Nations (UN) was established to create a permanent system of global security and worldwide co-operation (United Nations. and International Court of Justice., 1945). The Universal Declaration of Human Rights approved by the United Nations General Assembly in 1948 defines wellbeing as a human right. Article 25

specifically mentions that *'Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control'* (United Nations., 1948). Under this institutional framework, economic growth and material wellbeing dominated post-war development theories.

As development and wellbeing concerns expanded beyond the post war reconstruction strategies, global attention was placed on poverty reduction and sustainable development. The first understandings of wellbeing for development purposes were based on 'utility' as an economic perception that equates wealth and consumption with satisfaction. This one-dimensional understanding of wellbeing has led to a series of interventions in search of economic development, income generation and access to assets. Over time, as some initiatives proved successful in their economic outcomes while wellbeing failed to be achieved (Layard, 2006, Scitovsky, 1992), new and old lines of thinking were explored and introduced to understand and tackle wellbeing in development. These are developed below.

2.1.2 Subjective, Objective and Ethical wellbeing

There are three basic understandings of wellbeing. All three have different connotations and may be regarded as independent by some or as complementary by others.

2.1.2.1 Objective Wellbeing

Objective Wellbeing is commonly related to material and/or observable characteristics. Criteria can be defined without reference to the individual's preferences and mainly represent indirect measures of true conditions that researchers attempt to evaluate. Objective wellbeing can be divided into physically and socially good conditions, as it refers to the specific proxies used for its measurement. A clear example of indicators for objective wellbeing are the Millennium Development Goals (United Nations Development Group, 2003). The social sciences have focused strongly on objective measures of wellbeing developing a series of indicators of life conditions under both physical and social considerations.

2.1.2.2 Subjective Wellbeing

Subjective wellbeing is often regarded as happiness (Sumner, 1996), yet it goes beyond happiness and is mainly related to the particular preferences and characteristics of an individual or a collectivity. Within subjective wellbeing one can find hedonic[27] and eudaimonic[28] visions. The study of subjective wellbeing was internalized by psychology, and a big body of knowledge has been developed to conceptualize and measure it. In parallel, partly distinct conceptualizations emerged in sociology, health sciences and other related areas, with the label 'quality of life'.

2.1.2.3 Ethical Wellbeing

Ethical Wellbeing is a concept born within ancient Greek philosophy. The Greek word eudaimonia may be translated as happiness, flourishing and in some instances as wellbeing. Yet it reflects more than a mere sensation of happiness pleasure or desire; it considers the reasoning condition of human beings, their search for the meaning of life and, their social relations and identities. According to Aristotle eudaimonia or wellbeing reflects a life of virtue that stands as greater worth than seeking out pleasure (Toner, 2006). It consists of the realization of one's true nature through the actualization of human potentials. The Aristotelian tradition brings together different standpoints on wellbeing and introduces the concept of ethics into one global conception described as well-living (Gasper, 2004).

2.1.3 Wellbeing measurement

The concept of wellbeing has been associated with poverty, quality of life and welfare; and under such denominations its measurement has been a topic of prolific work for social scientists, psychologists, and scholars from different traditions. Accounts of measurement can be grouped within three perspectives. The first perspective focuses on objective wellbeing though gradually evolving into a second perspective that integrates elements of objective and subjective wellbeing. The third perspective is one mainly concentrated on subjective wellbeing.

[27] Hedonic wellbeing refers to the maximization of pleasure as the fundamental goal in life and means of achieving happiness. Hedonism was the basis for utilitarianism developed later by Jeremy Bentham, James Mill and John Stuart Mill.

[28] Eudaimonic wellbeing is related to happiness or flourishing, understood as living a good life, a life of virtue.

2.1.3.1 Objective measurement of wellbeing

The objective measurement of wellbeing was the dominant paradigm in post-war development thinking. Measures of poverty were concentrated on income and consumption, fostering the creation of various indexes that permitted the establishment of a monetary poverty line in either absolute or relative terms. Indicators such as 'Gross Domestic Product' and the 'Gini co-efficient' would aid in the global classification of poverty and inequality, while others like the 'dollar per day' establish an internationally comparable pattern for poverty measurement. On the other hand, specific poverty indicators like the 'head count ratio', 'poverty gap index' and 'poverty severity index', also contribute in a qualitative description of poverty under economic terms. Alternatively, the AF method for multidimensional poverty measure integrates income poverty measures with the range of deprivations experienced by people, and it can be broken down to analyse specific groups in a society. Nevertheless, despite the attempts to describe poverty qualitatively, these measures remain are of limited use when trying to understand poverty dynamics at a local level.

2.1.3.2 Integrated measurement of wellbeing

The integrated measurement of wellbeing is a trend that started with the criticism of objective measures of wellbeing. The most fundamental criticisms argued that economic outcomes, assets, income and consumption could not address the multidimensionality of the concept and proposed to integrate new variables that reflected both objective and subjective elements of wellbeing (Sen, 2001). Furthermore, Chambers stated that the needs of the poor could be ordered as first survival, than security and ultimately self-respect (Chambers, 1983); in some way resembling Maslow's hierarchy of needs (Maslow, 1943). Gradually the focus on 'human needs' on one hand. and on 'human capabilities' on the other, led to the introduction of new variables into the definition and measurement of wellbeing.

> **Human needs***,* refers to things that are a necessary condition for human existence and realization. Within the context of wellbeing, human needs refer to both basic needs and mere desire. The difference between the two strains lies mainly in perception and intention, where basic needs do not relate to human intention or perception, they are necessary to and sufficient for a recognizable human existence (Griffin, 1986). Desire needs on the other hand are bound to perception and

intention of the individual, depending on subjective standards such as taste, attitudes, interests (Griffin, 1986) and culture among others.

Human capabilities is a concept introduced by Amartya Sen that presents a difference between people's capabilities (what they can be and can do) and their functionings (what they actually are and do) (Sen, 2001). This perception attempts to introduce subjective wellbeing into welfare economics mainly dominated by economic efficiency. The concept is developed further in collaboration with Martha Nussbaum (Nussbaum et al., 1993), Sudhir Anand (Anand et al., 1996) and James Foster (Sen and Foster, 1997); to make the Capabilities Approach that inspired the UN's Human Development Index.

The livelihoods framework is a different alternative to poverty measurement and development that introduces natural resources, human and social assets within a specific context. The framework comprises capabilities, assets and activities required for a means of living (Chambers, 1992, Scoones, 1998). By analysing a broad vision of the context, the framework attempts to minimize the imposition of external values in the definition and assessment of poverty. As it was conceived, it should use a broad range of participatory methodologies in an effort to capture the vision and perception of local people. Despite the wide recognition of the benefits of the framework as an integrated perspective and the even wider dissemination of its use through donor support and an interactive platform[29], four fundamental weaknesses were identified (Scoones, 2009). According to Scoones, these four weak points are related to the framework's failure to engage with economic globalisation processes, debates about power, politics and governance, challenges of environmental sustainability and with fundamental transformational shifts in rural economies.

The failure to engage in the debate about power contradicts the fundamental nature of the livelihoods framework as a tool to measure wellbeing and promote development. Reflecting on the vision and voice of the people, the 'Voices of the Poor' study finds that poor people define poverty not only in terms of material wellbeing but as powerlessness (Narayan, 1997). Therefore, attempts to measure, define and tackle poverty must address the issue of powerlessness as a means to achieve wellbeing (Narayan and World Bank., 2005). Issues of power and

[29] Livelihoods Connect is a virtual platform hosted by ELDIS that provides a knowledge sharing environment on livelihoods. http://www.eldis.org/go/livelihoods

empowerment are therefore central for the achievement of wellbeing as conceived by the poor themselves.

2.1.3.3 Subjective measurement of wellbeing

Direct measurement or evaluation of subjective wellbeing focusing on ideas of 'Subjective Wellbeing', 'Life Satisfaction', 'Quality of Life' and 'Happiness'; has been central to disciplines such as health and psychology and the economics of happiness (Gough et al., 2007). These approaches rely on individual accounts. Some measures within the field of hedonic psychology ask subjects regarding the perception of their life as a whole, in other cases it is ascertained by combining measures of affect balance[30] and life satisfaction[31] (Griffin, 1986). The usefulness of the concept relies on the possibility of an interaction with the subject group or individual, and the self-determination of wellbeing that avoids the imposition bias.

2.1.4 Wellbeing in developing countries

Despite the broad range of conceptualizations, the Western idea of wellbeing through development has been widespread since the 1970s. The World Bank along with other multilateral, bilateral and unilateral development agencies has been working globally to improve wellbeing through economic development. Some of the most recent and well known initiatives of this nature are the United Nations Development Program's Agenda 21 and the Millennium Development Goals. All of these focus mainly on Western perceived needs and wellbeing. However for local poor people all over the world, the concept of wellbeing goes beyond the material dimension and into more complex interactions. Poor people's ideas of a good quality of life are multidimensional and include material, physical and social wellbeing, but also reflect on security and freedom of choice (Narayan-Parker and World Bank., 2000, Narayan-Parker, 2000).

Culture and values have a strong influence on wellbeing perceptions (Frece and Poole, 2008), particularly on subjective wellbeing (Yamamoto, 2008). Cultural characteristics such as individualism and collectivism are central in the definition of wellbeing in a particular setting. In collectivist societies people have more group cognitive elements whereas in individualistic societies people have more personal constructs (Triandis, 1995).

[30] It refers to emotions, moods and feelings of a person.
[31] It is a global judgment of one's life and the satisfaction with specific domains. It is considered a component of subjective wellbeing.

Individualism and collectivism depend on the specific manifestation of contextual variables for their expression. Collectivism emerges when individual objectives are highly convergent with those of other individuals in a group, thus promoting aggregation to overcome adverse situations and to create favourable environments for their survival and expansion. Individualism on the other hand develops when individual goals are independent from those of the group (Triandis, 1995). This goal oriented manifestation of individualism and collectivism in society leads to different shades and combinations of both patterns depending on context, history, culture and other related variables. Therefore, if culture and values are influential in the definition and perception of wellbeing, it is important to visualize the possibility of many different context specific definitions of wellbeing.

2.1.5 Understanding wellbeing in Bolivia as part of the Andean region

Collectivism in the Andes is a strong cultural characteristic (Hofstede, 1991) mainly represented by communal forms of organization that enabled survival and expansion under adverse circumstances. These forms of organization date back to pre-Hispanic and pre-Incaic periods (Querejazu Lewis, 1989) in the form of '*pueblos indígenas de las tierras bajas*[32]'(Teijeiro Villarroel, 2007), *señoríos*[33] and *ayllus*[34] (De Mesa, 1999). Despite 500 years of colonization by the Spaniards, traditional collectivistic practices and forms of organization in the Andes remain viable. *Ayllus, sindicatos agrarios*[35], and *pueblos indígenas* are strong and recognized forms of organization in Bolivia today[36]. Despite continuous pressure from the market economy, reciprocity[37], solidarity and cooperation are still fundamental principles in diverse Andean settings (Albó, 1989). Practices of *ayni,*

[32] It refers to indigenous or ethnic groups that developed on the lower areas of the Andes and towards the Amazon region.
[33] Denomination used for communal forms of aggregation in the Aymara culture. It binds the ethnic background with the geographic domain into one indivisible unit called 'señorío'
[34] It is a Quechua word that refers to the most basic and fundamental form of aggregation in communal life. It was the building block of society and the state for the Incas.
[35] A form of organization introduced in rural areas of Bolivia after the agrarian revolution of 1952. Although it was created to gather agrarian workers and has some resemblance with syndicates, its uniqueness lies in the cultural relation with practices and structures from the ayllus and señoríos of the Quechuas and Aymaras.
[36] The Bolivian national constitution approved by settling referendum on 25.01.2009, observes the rights of 'pueblos indígenas' as organizational structures (Articles 30, 31 and 32). Furthermore, their autonomy and self-government is also recognized (Articles 289 – 296).
[37] In the context of the Andes, reciprocity is a cultural norm that guides the exchange of goods and labour as a response to the behaviour of others.

mink'a (Albó, 1988) and *faena*[38], as collective forms of work still practised in Andean communities.

The 'Andean Worldview'[39] is the conception or image that the Andean people have of themselves and of the world (Schaedel, 1988). It is the interpretation of their natural and cultural context; the way they feel, sense and project the world around them (Huanacuni Mamani, 2010). It entails a strong collective visualization of the world where everything is connected, is important and is part of a perfect balance. It is a type of collectivism that goes beyond the communal aggregation of individuals for shared objectives. It actually reflects a holistic vision and the aggregation of different levels of beings in a symbiosis where humans are merely one component. It integrates humans with divinity expressed in nature '*achachilas*'[40] and divinity in its primordial or creative power '*pachamama*'[41]. Furthermore, this world view also known as Andean Cosmovision has strong ethical and moral essence, for it pictures equilibrium and stability as a harmonious relation of components. Humans must live in harmony with other humans, nature and the divinity.

This harmonious integration of humans with nature and the divinity is the essence of the conceptualization of wellbeing for communities in the Andes. The concept of Wellbeing is represented by the Quechua words '*sumak kawsay*'[42] or the Aymara words '*suma qamaña*'[43] which have been translated to Spanish as '*vivir bien*' or to live well. Yet the individual words in both Quechua and Aymara entail a much more profound meaning(Huanacuni Mamani, 2010) that can be translated as *'living a full life'*[44].

Andean communities hold some highly collectivist traits; they tend to form extremely cohesive groups which are difficult for an outsider to access. This approach to life is evident in relation to income and assets where decisions tend to stress the maintenance of harmony (Hofstede, 1991). Furthermore, wellbeing is understood under a community

[38] Aymara, Quechua and Spanish words commonly used in the Andes to reflect types of collective work.
[39] From the Spanish 'Cosmovisión Andina'.
[40] Aymara voice Commonly used for supernatural spirits that live in natural landmarks such as high mountains, phenomenon like wind or other intangible expressions of nature. They are commonly associated with the spirits of the ancestors that look after their descendants. The same conception in the lowlands is called 'jichi' and includes nature expressed in animals.
[41] Aymara and Quechua voice that translates as "Mother Earth", understood as a divinity that enables life including earth, time and the universe. It is a sacred place, a place of encounter with divinity. It is the female expression of God.
[42] Sumak = fullness, sublime, great, beautiful, superior; kawsay = life, be
[43] Suma = fullness, sublime, great, beautiful,; qamaña = live, coexist, be
[44] This understanding of reality implies that all (living and non-living things) are part of Mother Earth, of life and reality, where we all depend on and complement each other.

perspective and based on solidarity and reciprocity (Schaedel, 1988) as principles of the Andean Worldview. This perception may at times be incompatible with the wellbeing concept introduced by Western-style development initiatives that promote access to services, income generation and economic growth. According to Huanacuni, both Western paradigms of either extreme – communism or socialism, and capitalism – individualism are totalitarian, exclusionary and anthropocentric (Huanacuni Mamani, 2010). Therefore there are fundamental differences between the Western conceptions of the world order and the Andean World View.

2.1.6 Returning to ancient ethical values on wellbeing

Ethical wellbeing or well-living is recorded to have been used initially by the ancient Greek philosophers (See section 2.1.2.3) who considered wellbeing within an ethical perspective that reflected a life of virtue that produced greater satisfaction than mere pleasure, desire or happiness. Nevertheless, this virtuous and ethical conception of wellbeing remained as a philosophical standpoint and failed to be widespread and widely internalized by Western culture.

Many developing countries have collectivist societies where the moral dimension is extremely important for the definition of wellbeing; it is not simply about the good things in life but about living a good life (White, 2009). Those moral dimensions are rooted in the ancient wisdom of many cultures. A clear example is the Andean Worldview that, as previously noted, highlights the integration of humans with the divinity expressed in nature and with the divinity as the earth, time and the universe. This vision of the world developed in isolation from the influence of the Greek philosophers, yet it targeted a similar objective: the ethical concept of wellbeing expressed in well-living or living a full life. The Andean Worldview became a way of life in the pre-Hispanic Andes and endures with different degrees of strength until today. Attempts are being made to incorporate this vision formally as part of macro development perspectives and policies in Bolivia[45] and Ecuador[46].

[45] The Bolivian government launched a new development plan in 2005 called "To live well" where the concept was officially introduced as part of a vision for development. In 2009 the Constitution of the new Plurinational State of Bolivia was approved and incorporates the concept of wellbeing in the sense of the Andean Worldview.

[46] Ecuador approved its new constitution. It declared itself to be a Plurinational state embracing the Andean World view for wellbeing "Sumak Kawsay".

Various elements of wellbeing as an ethical concept are common in other non-Western cultures and are strongly related to collectivistic societies. However, wellbeing theories and international development practice do not start with the wellbeing conception of each culture, they introduce the Western conception ignoring divergent features (Yamamoto, 2008). Interventions based on this Western conception of wellbeing may achieve some improvements, depending on the level of convergence between locally specific conceptions of wellbeing and those used by development practitioners. Nevertheless, to respect culture and values while at the same time support development and wellbeing, a high degree of flexibility is required to internalize and ponder the diversity of standpoints. Furthermore, it is important to mention that although attending basic needs is important, to achieve wellbeing or stability in developing nations, people's opportunities to fulfil the basic psychological need are to be addressed as the foundation of healthy behavioural societies (Ryan, 2007).

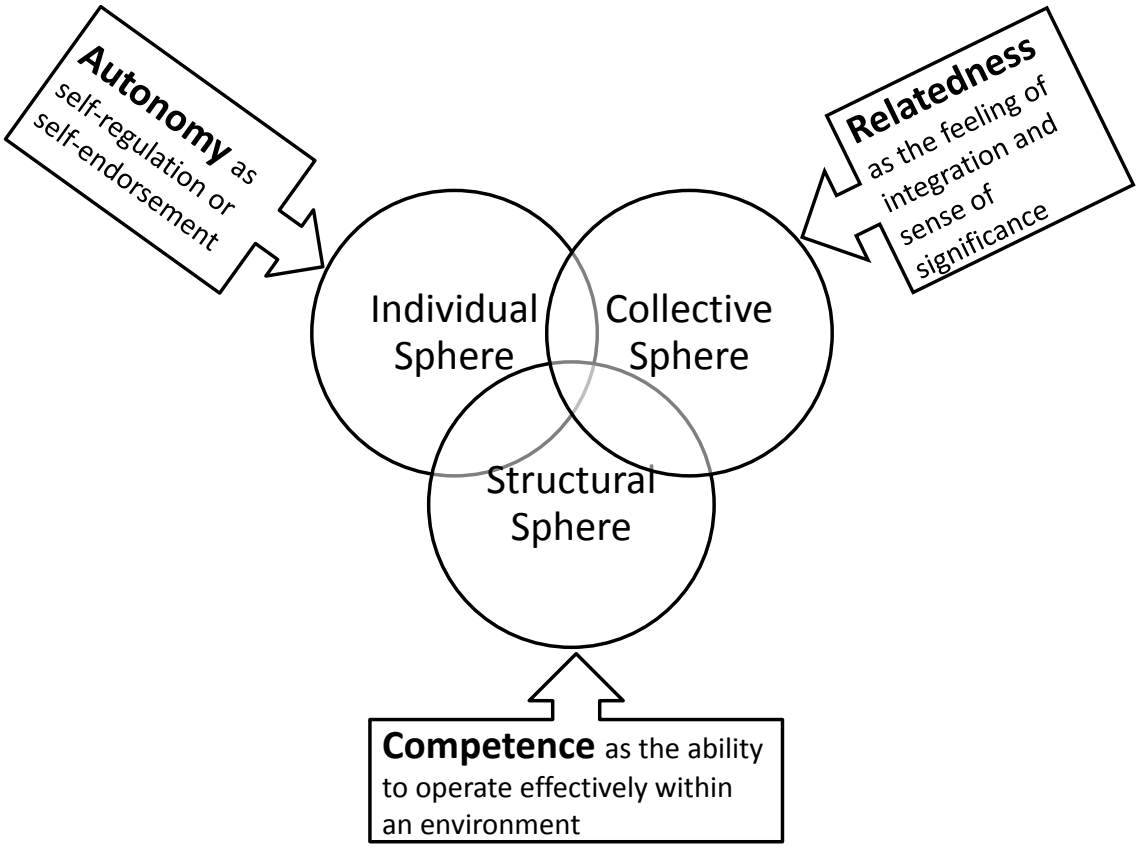
2.1.7 How can wellbeing be achieved under so many definitions and visions?

Evolutionary trends in development that come from diverse fields of knowledge converge on the need to include local, individual and actor-centred perspectives of poverty in order to achieve development and thus wellbeing (Chambers, 1983, Narayan-Parker and World Bank., 2000, Sen, 2001, Long, 2001). As we have seen in previous sections, the objectivist measures of wellbeing have been criticized deeply for their unilateral view of poverty and great efforts have been made to progressively include more and more subjective elements in the economic perception of poverty measurement (Sen, 2001). Furthermore, as a definition of poverty by the poor shows powerlessness to be a central concern, empowerment (further addressed in section 2.2) becomes a central concept for the eradication of poverty (Ferreira et al., 2005, United Nations., 1993, World Bank., 1990, World Bank., 1997, World Bank., 2000). The poor must be empowered initially to define poverty in their own terms and within their particular context, and later to direct the path for a development process that respects their values, culture and identity; thus self-determination becomes a part of a development process that ultimately achieves wellbeing from both individual and collective perspective.

Self-determination theory specifies a small number of basic psychological needs, and is a useful tool for the promotion of wellbeing across development and cultures (Ryan, 2007). Applied to wellbeing, the self-determination theory argues for the fulfilment of three basic psychological needs as the axis for a development process guided and ultimately

determined by the end-users. According to Ryan, the first basic psychological need is *'Autonomy',* understood as self-regulation or self-endorsement rather than independence. The second is '*Competence,'* or the ability to operate effectively within an environment. The third is '*Relatedness',* understood as a feeling of integration in a community or a sense of significance to others. The degree to which these basic needs are fulfilled will determine in turn the degree of vitality and persistence of an individual as it is expressed in different domains of life (Ryan, 2007). This position converges with Paulo Freire's ideas of critical consciousness that argued for the development of *awareness* through education (Freire, 2009). Figure 2.1 shows these three basic psychological needs from self-determination theory and how they relate to the spheres or types of empowerment presented in section 2.2.5 and Figure 2.2 below. The need for autonomy is directly related to the individual sphere and to empowerment at the individual level. The need for relatedness or feeling of integration and sense of significance are embedded in the collective sphere and empowerment at the collective level. The need for competence is related to the environment and thus to structures that enable or constrain empowerment.

Figure 2.1 **Basic psychological needs from the self-determination theory and their relation with the spheres or types of empowerment**



Source: Personal elaboration

Both self-determination theory from psychology and the critical consciousness perspective originally formulated by Greeks and later adopted by Freire as a transformative tool, argue for the empowerment of individuals and communities. Given that empowerment reflects an ability to take control over one's life in the present and to plan one's future, it reflects both *autonomy* and *competence*. Furthermore, empowerment implies the understanding of the environment to reflect on the factors that shape it and to induce it towards change (Titi and Singh, 1995), which in turn also refers to *awareness* and *competence* or the ability to operate effectively within an environment. On the other hand empowerment is about power relations that occur at different levels and within different contexts, being therefore directly connected to *relatedness* as a basic psychological need and a transformative process. In such circumstances, empowerment in its broadest sense must be fostered to promote awareness and critical consciousness while at the same time providing tools for the achievement of the basic psychological needs. This does not mean that wellbeing ultimately depends on empowerment, yet it is a premise for a cultural and context specific definition of wellbeing that will in turn guide any significant development initiative.

2.2 The concept of empowerment as it stems from power definitions

A concept that has been highly questioned for its instrumental and often decorative use is the term empowerment (Cornwall and Brock, 2005, Eyben and Napier-Moore, 2009, Kwok-Fu Wong, 2003). For the purpose of this research, the concept of power is analysed as it emerges from philosophical and political thinking, and later related to concepts introduced by feminist scholars. Through the use of diverse lines of thinking a holistic definition of empowerment is presented as the basis for the research agenda, which reflects on power exercised under different types of definitions and in different spheres of life.

2.2.1 The concept of power

Notions of power in modernity begin in the early 16th and 17th century. Nicolo Machiavelli in his famous book "The Prince" describes strategies for the exercise of power. He describes it as a resource and analyses the exercise and management of power (Machiavelli and Bull, 1999). A century later Tomas Hobbes, in "The Leviathan" represents power and its causality as a hegemony and conceptualizes it as the means of a man to obtain some future apparent good. He also classifies it as being inherent and acquired (Hobbes and

Tuck, 1996). These two contrasting representations, the first that focuses on the mechanisms of power and the second that visualizes it through a moral perspective, have been the origin of the two main routes along which thought about power has continued to modern times (Clegg, 1989).

Thoughts about power continued to evolve in the work of social scientists after the Second World War. Being a relational phenomenon, the definitions of power advanced to reflect the relationship between the powerful and the powerless. Following Hobbes' line of thinking, Max Weber linked power with concepts of authority and law. His interest in power as a factor of domination led him to define it as '*the probability that one actor within a social relationship will be in a position to carry out his own will despite resistance…'* (Weber et al., 1978). This definition was the cornerstone of an interpretation of power as 'power-to'. On the other hand, Dahl located the discussion of power inside the boundaries of a community. Within this framework he states that power is exercised by particular individuals in order to prevent others from doing what they prefer to do, or to follow the private preferences of those who possess the power (Dahl, 1961). This perception of power is the origin of what later has been called 'power-over'. These two definitions of power have been central to an on-going debate amongst social scientists. Further elaboration on the different types of power and examples of their manifestations will be presented in section 2.2.2.

On the basis of 'power-to' and 'power-over', a series of models and theories have been developed, that attempt to explain the nature and occurrence of power. Eventually three dimensions are presented to explain the different ways in which power manifests itself. The first manifestation of power also referred to as the overt face of power, is an intuitive idea (Dahl, 1961) that considers action over decision making. The second dimension is also called the covert face of power, and touches the prevention of decision making (Bachrach and Baratz, 1962). The third dimension is what Lukes calls the 'latent dimension' (Lukes, 2005) that refers to the implantation in people's minds of interests contrary to their own good. In the same line of thinking Gaventa in his power cube recognizes three degrees of visibility of power, distinguishing between visible, hidden and invisible manifestations of power (Gaventa, 2006). This three dimensional perspective is challenged by Foucault who systematically rejects the existence of power as a source from which actions stem and pictures only an infinite series of practices, thus opening up the application of the concept and extrapolating it from sociology to all fields of the social sciences and humanities

(Foucault et al., 2000). Even though the roots of the concept are grounded in political theory and philosophy, its importance has gradually been established in contemporary sociological discourse.

More recently definitions of power and their related theories have continued to evolve in a search of models that explain the way power processes take place in society. One of these cases is Gaventa's model of power and powerlessness that emerges from Lukes's tri-dimensional view of power and seeks to explain situations of social inequality, uncovering the direct and indirect ways in which social powerlessness is created and maintained (Gaventa, 1980). Furthermore, Giddens' theory of structuration is a dialectic vision of power where all human actions are at least partly predetermined based on the varying rules of a specific context (Giddens, 1984). Both lines of thinking show an evolution of the concept of power. The debate reflects on new dimensions of an analysis that although begun in the political sciences, has entered vigorously into the social sciences.

2.2.2 Mainstream definitions of Power

As we have seen previously, there are two main models or definitions of power that reflect on their distinctive features. A clear division is established between 'power-to' and 'power-over, as the mainstream definitions of power.

2.2.2.1 Power-to

'Power-to' is a definition born with Weber and expanded by Parsons. It is more broadly defined as the capacity to have an effect. It is about agency and is regarded as generative or productive power which creates new possibilities and actions (Rowlands, 1997). The definition of power as 'power-to' views the term as ever-expanding energy (Hartsock, 1985, Parsons, 1963), uses an image of human development and considers it infinite and innocuous in its effect over others. The danger with this perspective is that it can suggest that power is a personal attribute (Nelson and Wright, 1995), thus placing responsibility of powerfulness and powerlessness on the individual. On the other hand, this definition of power informs the capability approach of Amartya Sen, who asserts that people are not free when they do not have power to make choices about their lives (Sen, 1995). Therefore, 'power-to' focuses mainly on behaviour (Lukes, 2005) of decision making or its prevention (Bachrach and Baratz, 1962).

For example, analysing farmer's linkages with agricultural services in Bolivia, a manifestation of power-to would be a negotiation with service providers to enhance services in the community. The negotiation implies a behaviour of decision making where farmers choose to demand specific enhancement of services.

2.2.2.2 Power-over

'Power-over' is a concept based on a different image. While 'power-to' reflects on an infinitely expanding and innocuous process, 'power-over' pictures a closed system of power fluctuation, a zero-sum phenomenon where one gaining power occurs at the expense of another, and where power relations are coercive. It is perceived as controlling power to which response may be compliance, resistance or manipulation (Rowlands, 1997). This definition includes a behavioural component yet it is also a critique of the behavioural focus since its main characteristic is the analysis of features of observable and latent conflict. It illuminates the systematic ways in which power is perpetuated and exercised to prevent conflict (Gaventa, 1980, Lukes, 2005).

Looking back at our previous example where we analysed farmer's linkages with agricultural services in Bolivia, a manifestation of power-over would be a prevention of the negotiation process between farmers and service providers. In a case observed in the municipality of Cabezas in the Chaco region of Bolivia, a service provider was working on technology innovation for cattle production with large and small landholders. Two of the large landholders had strong personal and family relations with the company that provided services. During the participatory mid-term evaluation, facilitators attempted to promote a negotiation process through identifying gaps and weak areas of the project. Throughout the workshop it was impossible to identify a weakness and all activities were positively evaluated. Two or three times during the workshop a man came to mention that lunch would be ready soon. After the workshop everyone was invited to a special barbecue prepared by one of the participants (a large land owner). During the meal plenty of meat and drinks were provided. In an informal conversation with a farmer he mentioned that most of the technology was actually more useful for the large landowners and not for them, but they were still grateful because if it hadn't been for the action of the large landowners they would not even have this little support. They believed that it was always the action of large landowners that brought support and development to the region despite being told

that the government was financing the initiative to benefit small poor farmers. (Botello, 2005)

In the previous example we can observe the exercise of power-over through the prevention of decision making and negotiation. Farmers believe that they need to be grateful to large landowners and expressing disconformity or questioning would be inappropriate, they understand it as biting the hand that feeds you. The announcements of lunch being soon ready, and the big lunch provided afterwards is a reminder of how benefits come to people through the action of power holders.

2.2.3 Power defined by gender theory

In gender theory the basic distinction between 'power-over' and 'power-to' structures much of the discussion of power. When the 'power-over' definition is analysed, power is viewed as domination that reproduces oppression, patriarchy and subjection. It reflects a relationship that is unjust and oppressive to those over whom power is exercised. On the other hand, when the 'power-to' definition is analysed, it is related to capacity and ability. Furthermore, many feminists derive their own thinking about power from Foucault's perception of power as a decentralized network system, and link the definition to a type of 'power-to' or creative and generative power.

Concepts of 'power-with' and 'power-from-within' emerged from feminist and other social movements seeking to understand the power phenomenon from collective and internal perspectives. The argument for this new conceptualization was that, because power has been understood from the position of the socially dominant – the ruling class and men – feminist theory needed to conceptualize power from a specifically feminist standpoint, one that is rooted in women's life experience (Hartsock, 1985). It is also important to understand that definitions of power that reflect domination are particularly masculine (Miller, 1974) and that feminist definitions reflect on women's perception of power. The experience of women as mothers and caregivers is the essence of a power definition that reproduces transformative growth for oneself and for others (Held, 1993).

2.2.3.1 Power-with

'Power-with' is a collective ability that is a function of relationships of reciprocity between members of a group (Follett, 1941), and therefore regarded as collective action in response

to powerlessness (Eyben, 2005). It reflects a sense of the whole being greater than the sum of the individuals – a positive-sum phenomenon (Rowlands, 1997).

Looking back at the example of "power –to" mentioned in section 2.2.2.1, where we analysed farmer's linkages with agricultural services in Bolivia, negotiation implies both individual and group action. To negotiate with a service provider the group needs to act as a whole. They need to agree on the issues they want to demand and on the flexibility of the negotiation. Power-with in this case refers to the group and its collective manifestations of choice.

2.2.3.2 Power-from within

'Power-from within' reflects the inner strength of every individual. Its basis is self-acceptance, self-respect (Rowlands, 1997) and self-worth (Eyben, 2005). In feminist thinking this concept is visualized as positive, life-affirming and empowering force that is totally antagonistic to power understood as domination, control or imposing one's will on others.

Once again recalling the example of power –to, where we analysed farmer's linkages with agricultural services in Bolivia, negotiation implies both individual and group action. Power-from within refers to individual capabilities and actions. Individual farmers need to manifest their choice. They need to have the inner strength and the conviction to express their perceptions inside the group and to outsiders. A farmer speaking up as a group leader to negotiate with service providers is a manifestation of power-from within.

2.2.4 The concept of empowerment

The term empowerment is currently used by people and institutions from various disciplines and political backgrounds. Different value systems have participated in the creation of the term (Sadan, 2004), therefore views about it can be polarized and users tend to assume an understanding of the appropriate meaning with a particular context (Rowlands, 1997). Furthermore, much debate has been raised regarding the loss of the essential meaning of the concept and its instrumental use in development practice (Cornwall and Brock, 2005, Eyben and Napier-Moore, 2009).

The concept of empowerment emerged with feminist movements and since then has been associated with a wide range of disciplines from management to health and from education to social sciences. Perhaps the best way to define the concept draws from the view of its antonym 'disempowerment'. Disempowerment is a state of powerlessness described as the inability to control what happens, the inability to plan for the future and the imperative of focusing on the present (Narayan-Parker and World Bank., 2000). Based on this premise empowerment can be defined as the ability to take control over one's own life in the present and to plan one's future. This simple definition can be extrapolated to all fields of knowledge for it reflects a multidimensional perspective that applies to oneself or to a collectivity in any particular sphere of life.

Empowerment in gender theory is a multidimensional and complex process that operates both at the individual and structural levels (Boulding, 1989). In any given context and particular situation, psychological, economic, social and political processes take place simultaneously and interact, leading to empowerment or disempowerment (Kwok-Fu Wong, 2003) of individuals or groups of individuals in variable degrees. Within this perspective it is impossible to visualize empowerment under one particular dimension or specific type of process. Its definition is therefore related to all the types of power that an individual or a group is faced with.

In the development arena empowerment has evolved with the 'bottom-up' approach to development (Titi and Singh, 1995). It is also associated with an alternative perception of development, one that understands poverty as disempowerment and empowerment as the process that reduces inequalities (Friedmann, 1992). Empowerment implies a holistic understanding of context and environment, to reflect on the factors that shape it and to induce change (Titi and Singh, 1995). It is about bringing people who are outside the decision-making process into it (Rowlands, 1995). It is defined as the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control and hold accountable institutions that affect their lives(Narayan and World Bank., 2005). Lately, on the exercise of power, a strong emphasis has been placed on formal decision making. Under this perspective empowerment is dependent on two variables: agency as the ability to make meaningful choices, and opportunity as the aspects of context that affect the ability to transform agency into effective action (Eyben, 2005). In this respect power is mainly about agency and it relates to the way the World Bank has used the term

empowerment over time (Eyben, 2005, Narayan and World Bank., 2005, Narayan-Parker, 2006, World Bank, 2000).

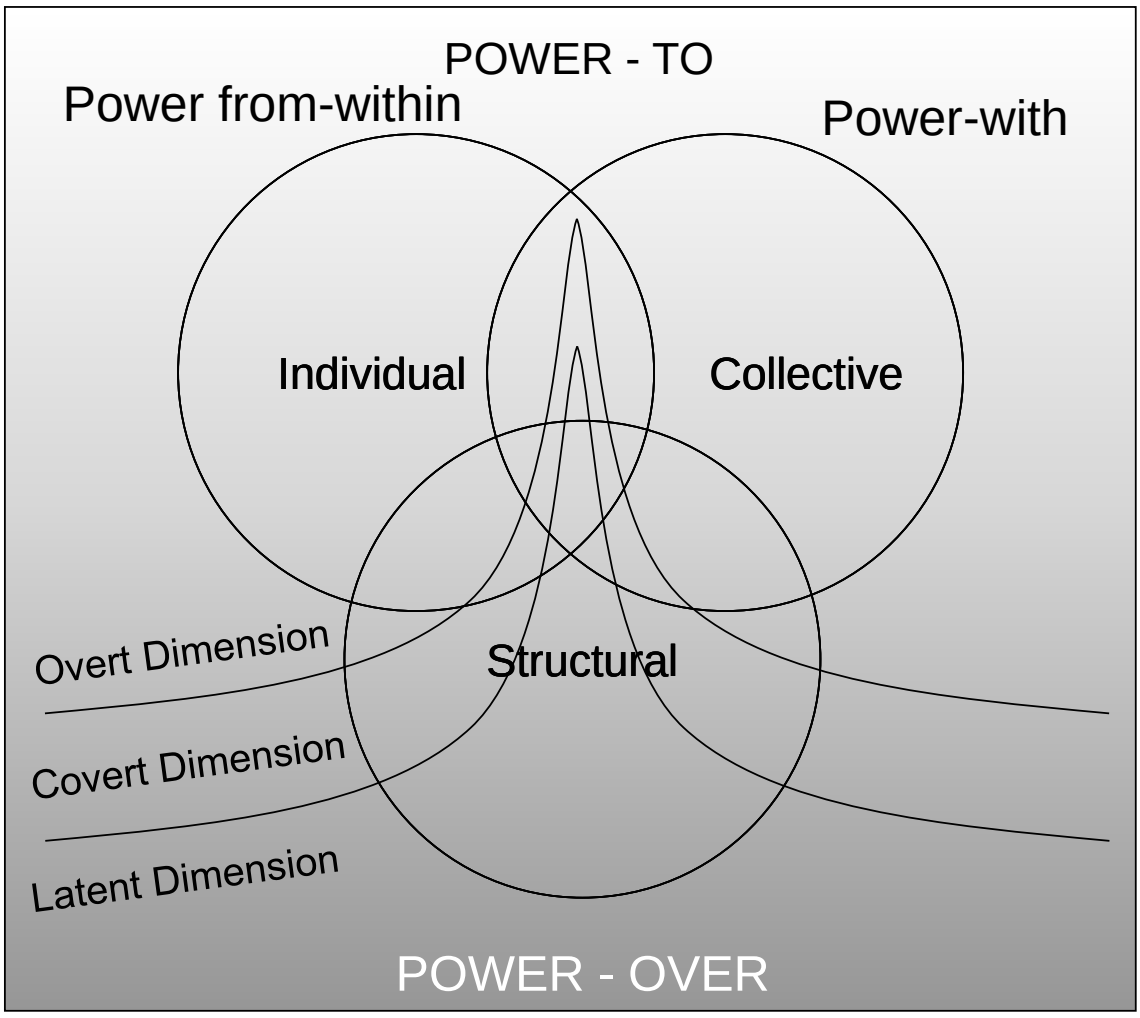
As we can see from the evolution of the term empowerment, its meaning and definition have evolved from a broad perspective that relates the word directly to power and its corollary definitions to a more specific view that places special emphasis on institutions and action by the poor people themselves to improve their own lives (Narayan and World Bank., 2005). Yet the concept of power is not explicitly formulated; instead the term empowerment is used as deriving from the 'power-to' definition, where the emphasis on structure and institutions is limited.

Development agencies in general have been working to promote development through empowerment. However the definition of empowerment used is often constrained. The elements of power-over are not addressed despite the fact that in most developing countries power has been exercised for centuries and is still being exercised as power-over. Whether coming from colonization, cultural practices, religious beliefs or other processes, this exercise of power in time has created formal and informal structures (Weber et al., 1978) that operate iteratively to legitimize (Martin, 1977) this power-over. In time it has even created psychological barriers (Sampson, 1965) that work adversely, disempowering people in their self-esteem and individual sense of potency. In this context development that seeks to truly achieve sustainable development must tackle empowerment holistically.

2.2.5 Visualizing empowerment in relation to power definitions

The concept of empowerment is located within the very centre of 'power relations' (Titi and Singh, 1995): it is actually all about power relations. Notwithstanding the argument regarding different types of power definitions, feminist thinking outlines four different types and relates them to different processes and social phenomena. Therefore a definition of empowerment must be directly related to power definitions. Figure 3 shows a graphical understanding of power definitions and the spheres or types of empowerment as they relate to these definitions.

Figure 2.2. Types of empowerment as they relate to definitions of power



Source: Personal elaboration

The conceptualization of empowerment based on spheres of occurrence or type, draws both from political and philosophical definitions of power as well as those introduced by feminist thinking. Power-over as domination is strongly linked to a structural sphere that itself relates to legal frameworks, institutional processes and mechanisms, cultural accepted structures and other formally and informally established structures of power. Yet this type of power is not exclusive to the structural sphere, it expands to influence directly the individual and collective spheres and indirectly through the action of the structural sphere (notice how shade of power-over reaches out to all spheres in different degree). It is also important to notice the different levels or dimensions of power-over as they reduce strength from the latent dimension to the overt dimension reaching all spheres of life in the process. Power-to, on the other hand, is closely related to the individual and collective spheres. At this point, the introduction of the power-with and power-from-within concepts

that originated in feminist thinking, allows one to better appreciate the specific sphere of action. Power-with as defined by feminists is directly linked to the collective sphere of empowerment, reflecting collective action and solidarity. In parallel, the individual sphere is better explained by the power-from-within concept that reflects the individual's sense of potency, and that implies a psychological dimension immersed in all of its capabilities. This representation of empowerment implies that no single definition of power can be assumed yet all must be fully understood and tackled if true empowerment is to be achieved.

Seeking a theoretical model that would contribute clarity in the measurement of empowerment, Alsop defined empowerment as: '*a group's or individual's capacity to make effective choices, that is, to make choices and then to transform those choices into desired actions and outcomes*' (Alsop et al., 2006). Furthermore, the definition assumes that empowerment depends on agency and structure, thus the emphasis on the relationship stated by several authors (Alsop et al., 2006, Alsop et al., 2005, Giddens, 1984, Narayan, 2005, Narayan and World Bank., 2005). This definition of empowerment has been used within a framework that emphasizes an economic perspective. Nevertheless, it is open enough to be convergent with a broad definition of empowerment that addresses the different types of power exercised in a given context. It is for this reason that the current study will consider empowerment as the capacity to make effective choices. It will also analyse the way that choice making relates to all types of power exercised in the different spheres of life (Individual, Collective, and Structural). In this regard we understand that the different types of power present in a given context will manifest themselves in the different spheres of life and will influence the individual's or group's capacity to make effective choices.

The capacity to make effective choices is influenced by agency and opportunity structure (Alsop et al., 2006, Alsop et al., 2005, Narayan-Parker, 2006). The dynamic interaction of these two factors is responsible for the achievement of different degrees of empowerment, therefore the following section will analyse these concepts in the development sector. This analysis will derive lessons for the construction and adaptation of an analytical framework that can be used to evaluate changes in levels of empowerment after interventions take place.

2.3 Structure and agency in social sciences

2.3.1 The on-going debate

Understanding the relation between individuals and society or agency and structure is one of the central contested issues in the social sciences because it touches on the essence of society itself. Since the emergence of social theory, scholars have attempted to theorise structure and agency and have created a large debate on how social phenomena are to be studied and explained. In the practical analysis of society, these concepts are often used to explain social phenomena, yet their definition is often vague and detached from the debate around the different theoretical frameworks (Akram, 2010). This significantly affects the effort to explain the specific properties and causal powers of different units of analysis (Wendt, 1987).

The agent-structure debate is organized around two axioms of social life. One of them states that individuals (human beings and organizations) act purposefully to transform the society in which they live, and the second maintains that social relations structure the interaction between actors (Wendt, 1987). Three general frameworks have been developed in order to explain social phenomena and the difference between them lies in the emphasis given to each one of these two axioms or components of social life. The following section will present the three main frameworks for the analysis of structure and agency and will describe how and why the dialectical framework is used for the analysis of farmer empowerment in Bolivia.

2.3.1.1 Structuralist and functionalist position

The structuralist and functionalist position makes agents the bearers of structures rather than power holders. This framework sustains that external coercive powers and social pressures are responsible for the constitution of society (Akram, 2010). Thus in this framework society is viewed as a reality non-reducible to individual psychology and behaviour, individual acts being only a function of impersonal laws and forces characterizing the social whole (Barnes, 2000, Durkheim, 1938, Fay, 1996). Furthermore, society is visualized as a single unified entity that resembles a living form (Morrison, 2006, Lopez, 2003). It stresses harmony and continuity of operation through the role of its parts, resembling organs that contribute to maintain unity and operation.

The depiction of individuals as passive objects of structural determinants has triggered the emergence of an opposing argument that contends in favour of the agency of human beings. This new framework is known as the intentionalist and voluntarist position.

2.3.1.2 Intentionalist and voluntarist position

The intentionalist and voluntarist position emphasises the role of agents and consequently denies structures the autonomy in society accorded by the structuralist and functionalist position. This approach focuses on human action as the main object of research, centring the analysis on everyday interactions (Sztompka, 1994). According to Weber, actions are driven by the subjective meaning that individuals attach to their revealed or concealed behaviour (Weber et al., 1978). Baert and da Silva on the other hand visualize human action through an economic lens, in what they call "rational choice". This rational choice basically states that individuals act and interact through individual plans that attempt to maximize the satisfaction of their preferences and minimize the cost involved (Baert and Silva, 2010). Yet despite the differences between Weber's social perceptions and Baert and da Silva's economic observations, both formulate agency-centric views that place individuals as the node of emphasis in social analysis.

2.3.1.3 Dialectical position

The dialectical position conceptualises a relationship between structures and agents as essential in social analysis. This framework seeks to combine insights from both the structuralist and intentionalist approaches, conceiving the relationship between structure and agency as independent but related[47] entities that jointly produce social outcomes (Akram, 2010). Different theorists have described this relation differently. On one hand Giddens in his theory of structuration, presents agency and structure as a dependent set of phenomena that shape society through their interaction. Individuals act and operate under certain social structures and circumstances, and through those actions they are at the same time re-creating those very same structures (Giddens, 1984); thus structure and agency, far from being opposed, are actually presupposing each other (Sewell, 1992). On the other hand Bourdieu's "theory of practice" introduces the concepts of habitus and field that attempt to explain how structural and agency dimensions of social life are related. In this

[47] Pierre Bourdieu, Anthony Giddens, Margaret Archer and Colin Hay recognize that structure and agency although historically interpreted in terms of dualism or opposing forces, they need to be understood dialectically and through the nature or their precise relationship.

theory habitus is a product of history, an open system constantly affected by experiences that reinforce or modify its structures (Bourdieu and Wacquant, 1992). Field is a network or a configuration of relations that is autonomous from the wider social structure or space (Bourdieu and Wacquant, 1992). Habitus and field are then connected in a dialectical relationship where social reality exists both in things and minds, outside and inside agents (Bourdieu and Wacquant, 1992).

While some criticize Giddens for not providing clear enough specifications of its principles and therefore posing difficulties for empirical research (Bryant, 1992, McLennan, 1984), others argue that his structuration theory does not transcend or bridge the agency-structure dichotomy but locks them together in a conceptual loop (Archer, 1982). Similarly, Bourdieu's habitus and field are criticised for his apparent denial of conscious decision making in the determination of human behaviour (Elder-Vass, 2006), in what would seem a reinforcement of structuralism (Alexander, 1995). Despite the criticism we must acknowledge that both Giddens' and Bourdieu's work have raised the need to analyse both agency and structure as interacting fields. Further advancement in the understanding of this interaction can be derived from field research that includes a wider perspective of social phenomena, incorporating history[48] (Sewell, 1992), culture[49] (Archer, 2005), consciousness (Elder-Vass, 2006, Akram, 2010), reflexivity and intentionality (Akram, 2010). This thesis will explore and explain further the simultaneous contributions of structure and agency to power and empowerment.

2.3.2 The concepts and the observable manifestations

As can be observed in the previous section, there is no way to measure in a quantitative sense, the opposing forces of structure and agency in development (Parker, 2000). Separating structure and agency from one another, causes problems of reification, where structure is viewed as enlivened and autonomous from human efficacy; or reductionism where structure appears as nominal rather than as a result of human relations that channel power flows. Thus structure and agency are interdependent processes and that is why culture, institutions and values, norms, beliefs and behaviours of humans co-evolve (Musolf, 2003). Conceptualizing structure and agency within a dialectical process will

[48] Sewell supports that agency and structure presuppose each other and this supports theoretically what social historians, historical sociologists and historical anthropologists do in practice.
[49] According to Archer, cultural powers are not defined clearly and the interplay between culture and agency could be examined in the same way as structure and agency.

contribute to the understanding of how certain patterned forms of social relations and practices are established, and how human agents contribute to such establishments (Parker, 2000). Much of the concepts developed in the dialectical approach by Archer, Hay, Giddens and Bourdieu, and further elaborated by Lopez and Scott, Musolf, Elder-Vass, and Akram, have been practically used for the conceptualization and identification of observable manifestations of structure and agency. Furthermore, this conceptualization will be used as a tool to analyse empowerment (Alsop et al., 2006, Alsop et al., 2005, Narayan, 2005, Narayan and World Bank., 2005) as an imminent social phenomenon.

2.3.2.1 Structure

Structure refers to innumerable social factors over which the individual does not have much control and which affect his or her life. In general, structure refers to social arrangements, social relations and social practices which exercise power and coerce the lives of individuals (Musolf, 2003). Structure originates from collective habits that find expression in definite forms such as legal rules, organizational frameworks, moral obligations, popular proverbs, social conventions, (Durkheim, 1938). Thus structure organizes social positions hierarchically so that power emanates from those who own the means. Some factors that make up the structural dimension of social life are race, class, sex, ideology, institutions, organizational hierarchy, groups, geographical location, period of history, mode of production, generation cohort, family culture, roles and rules (Musolf, 2003).

Lopez and Scott suggest that the conceptualizations of structure that come from different schools of thought are complementary and can be articulated to develop a comprehensive analytical framework. According to this articulation structure in general can be divided into three sub-sections: institutional, relational and embodied structures (López and Scott, 2000).

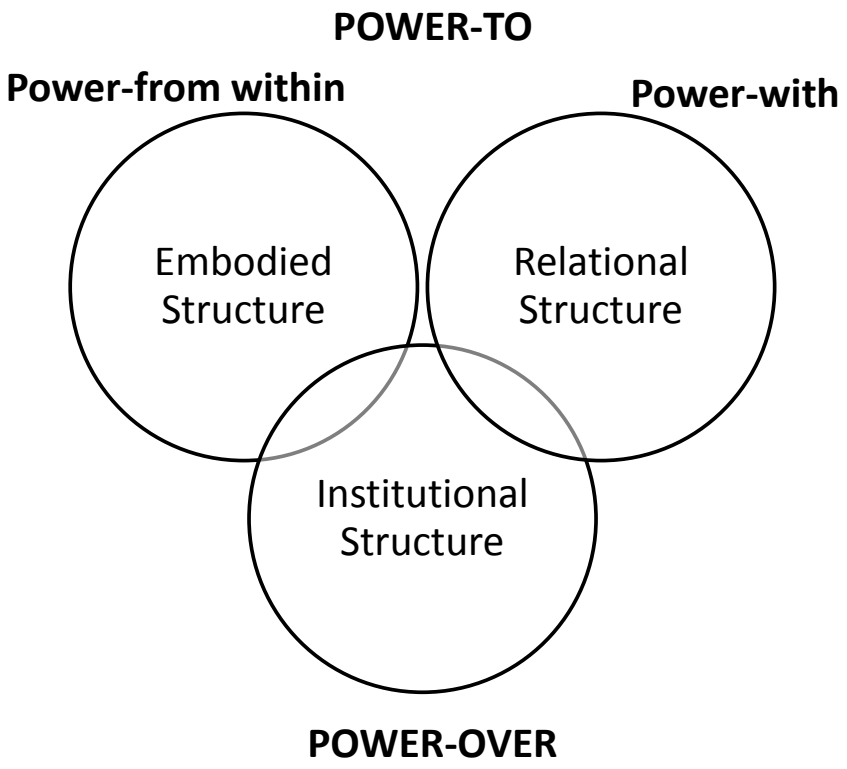
> **Institutional structure** includes cultural and normative patterns that shape the relations between agents through the expectation of each other's behaviour (López and Scott, 2000). This type of structure is congruent with Durkheim's notion of collective representation that refers to shared norms, values and ideas like patriarchy, nationalism and gender roles (Durkheim, 1938, López and Scott, 2000).

Relational structure on the other hand refers to the position that agents occupy in society as well as the interconnection and interdependence among them (López and Scott, 2000). This type of structure is congruent with Durkheim's notion of collective relationship (Durkheim, 1938, López and Scott, 2000).

Embodied structure places human agents at the centre of understanding of how social structure operates. It is the individuals themselves through their appearance and behaviour that resemble social structures. It is a behavioural disposition that includes habits and skills inscribed in humans and that enables them to transform both institutional and relational structures (López and Scott, 2000).

The three sub-sections of structure can also be related to the different forms of power exercised (See section 2.2.5). Figure 2.3 shows the relation between the different forms of power and the types or sub-sections of structure described above.

Figure 2.3. Types of power and their relationship with sub-sections of structure



Source: Personal elaboration

As an overall umbrella to these concepts of structure, Elder-Vass incorporates the concept of emergence that highlights the fact that structure, even though it is a product of human

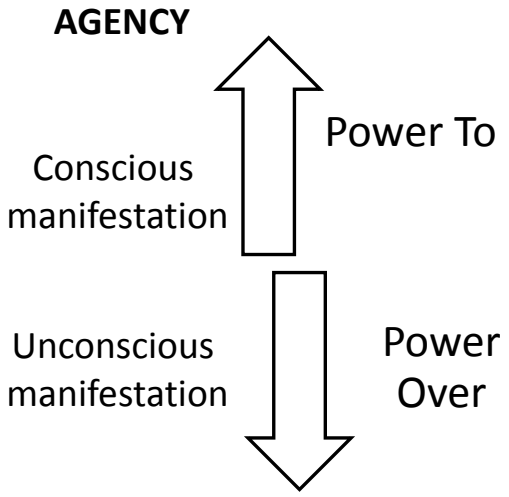
individuals, has a causal power of its own that is not a reflection of the power of the individual. In this concept of emergence, the power and properties of structure are not the same as the sum of individual powers and properties, but a different type of power with special properties that have resulted as an outcome of the aggregation (Elder-Vass, 2006).

2.3.2.2 Agency

An agent is one who has the capacity to cause things to happen (Andersen, 2009). An agent can be seen as both a person or a collective, and agency itself may be a function of the actor or the actor himself (Musolf, 2003). Agency refers to the capacity of an agent to act through the independent exercise of its own power. It emerges through the capacity of humans to assign meaning to objects and events, to define the situation based on those meanings and then to act.(Musolf, 2003) Some sociological traditions have developed the concept of agency based on the premise of reflexivity from the agent and full-consciousness (Archer, 2005, Hay, 2002, Andersen, 2009), thus over emphasizing it with regards to structure; others argue for an unconscious component that reflects the subtle effects of structural powers over agents (Akram, 2010, Elder-Vass, 2006). This dichotomy of conscious and unconscious behaviour enables a better understanding of the interaction between agency and structure.

> **The conscious** behaviour implies intentional, reflexive and strategic capacities resembling the exercise of *power – to,* presented in section 2.2.2.1. Agency that emerges from conscious behaviour is the exercise of freedom.
>
> **The unconscious** manifests itself as an influence from the structure that affects agents without them knowing of this process, thus resembling the exercise of *power-over* conceptualized in section 2.2.2.2.

Figure 2.4. Types of power and their relationship with manifestations of agency



Source: Personal elaboration

Endowed with agency in its conscious and unconscious manifestations, people can oppose and change structures for themselves. Policy in such cases can be a cure for social dislocation (Musolf, 2003). In Bolivia the "Water War" conflict is an example of a policy change as a result of the collective definitions and actions of social movements who have opposed those with more power and resources and challenged the structures. In this case, privatization of state companies was part of a structural reform package to liberalize the economy in Bolivia (Barja and Urquiola, 2003, Barda, 1997, Morales A., 1994). In the water sector the first transfer to the private sector took place in 1997 with SAMAPA Company in La Paz being transferred for administration by "*Aguas del Illimani*" Company;the second programed transfer was that of the SEMAPA Company from Cochabamba to Bechtel-owned "Aguas del Tunari" Consortium (Barja and Urquiola, 2003). This second transfer gave "Aguas del Tunari" control over all area water systems, including decades old community-operated wells, countryside irrigation networks, and rain collection systems; and produced an increase in water rates that negatively affected service users (Friedman - Rudovsky, 2008). In January 2000 a series of conflicts known today as the "Water War" began. Social movements from every stratum of society mobilized and by April 2000 after months of turmoil, the "Aguas del Tunari" Contract was rescinded as was the law that confiscated communal water networks(Shultz, 2000, Friedman - Rudovsky, 2008). This case shows how the exercise of agency challenged structures and how the reversion of the law is actually a structure shaping policy in response.

For the development of an empirical model to analyse agency psychologists and social psychologists have worked around three approaches:

a) Self-efficacy is the perception of oneself as a causal agent; it deals mainly with the ability that individuals have to handle particular situations (Bandura, 2000, Gecas, 2003).

b) Competences in planning, involves three dimensions (intellectual investment, dependability, and self-confidence) that enable the making and continuation of long term plans (Clausen, 1991).

c) Temporality and optimism, is the sense of agency embedded in time, implying intentionality and forethought (Bandura, 2000).

Mainly due to ease in measurement only the first approach of self-efficacy or self-perception will be considered in the development of the framework to evaluate empowerment. See section 2.3.4.2 and Table 2.5.

Although structure and agency are two components of social phenomena that lie at the centre of social analysis, they cannot be separated from culture and history as these two concepts interact and are also part of shaping human behaviour.

2.3.3 History and Culture in relation to structure and agency

Social scientists from different schools of thought have emphasized to different degrees the importance of history and culture in the structure and agency debate (Akram, 2010, Archer, 2005, Giddens, 1984, Parker, 2000, Elder-Vass, 2006). This section will provide a general introduction to the importance of history and culture in the analysis of empowerment through agency and structure.

2.3.3.1 History

History plays an important role in the evolution and formation of human thought. The concept of history carries embedded notions of human agency, change and the role of

material circumstances in the evolution of events and processes. It also raises the possibility of understanding present situations and learning from past events.

History is a continuous sequence of events that unfold through human action creating structures. Those actions are the result of intentional deliberation and human choice. Historians in this regard are able to explain historical processes "from within" as a reconstruction of the thought process of agents who bring them about (Cooke, 2001). Social structures in the present reflect the actions of past human behaviour (Archer, 2005, Elder-Vass, 2006) and influence current behaviour in a spiral where social structures themselves are produced and reproduced (Giddens, 1984) in interaction with human agency.

Repeated practices that define regional traditions are evidence of long term reproduction of situations. Joyce and Leopiparo would argue that:

> *"… what we today recognize as continuity, or better, repeated replication, is the material expression of the intentional actions of past agents working with the structures they inhabited, along with the unintended consequences of those actions that were incorporated in the structural matrix of later actors."* (Joyce and Lopiparo, 2005)368

It is in this visualization of history that Giddens' structuration becomes evident, and culture emerges as a structure of repeated replication, where agency includes choice, conscious or not (Akram, 2010), to repeat past practices.

For the purpose of this research, the historic background of the study sites is incorporated to inform the analysis of empowerment through variables of agency and structure. The objective of including history is to visualize differentiated outcomes and their possible echo in past structures, repeated practices, and the behaviour of agents over time.

2.3.3.2 Culture

Culture can be conceived as socially shared knowledge (D'Andrade, 1995) meaning knowledge that is both common and connected between individuals. It can be defined as a process of communication that produces shared meanings, beliefs and practices (Geertz, 1973). Culture takes different forms such as norms, rules, institutions, ideologies, organizations, threat-systems (Wendt, 1999). Furthermore Wendt argues for the

embeddedness of culture in the different spheres of life and in all shared knowledge (Wendt, 1999):

Culture is a shared experience. It is a framework that provides the context of life, shaping knowledge creation, perceptions, meaning and behavioural changes (Dutta, 2011). It is culture as the deliberate repetition of tradition that can persist even under adverse circumstances and great power differences (Silliman, 2001), yet it is not static but evolving.

Culture can influence thought and perception of the world. Cognitive science has found evidence that cognitive styles[50] (Barja and Urquiola, 2003) and language[51] (Morales A., 1994) can influence thought and worldview (Barda, 1997). Furthermore, Triandis has differentiated cultures through social patterns as individualist and collectivist (Triandis, 1995). These social patterns influence people's perception of wellbeing (See section 2.1.4 on wellbeing).

> **Individualist cultures** place emphasis on individual achievements and goals. They value autonomy over dependency. Individuals see themselves as independent and are motivated by their own preferences and needs.
>
> **Collectivist cultures** emphasize group membership and cohesion. For this type of cultures success of the group is above personal achievements. Individuals identify themselves as part of the collective and are motivated by duties to those collectives.

Based on the perceived influence of culture in perceptions of the world, the research presented considers some cultural elements in the analysis. A description of the linguistic background of the study sites and some outstanding elements are described. In addition traits of collectivism, individualism and worldview are also incorporated as part of the analysis (See Table 3.3).

[50] Cognitive style is defined as a habitual pattern in thinking or information processing. The evaluation of field dependent and field independent psychological processing found that field dependent thinkers are more aware of context and the relationship between things in comparison to field independent thinkers who tend to abstract away and experience objects independently.
[51] Language is a cultural item, thus linguistic effects on thought can be characterized as cultural effects.

A research on migration and multi-culture among young people from North Potosí and Chaco, revealed a broad understanding of the concept of culture (Rahnema, 1990). For these youngsters, culture implied elements of education, knowledge and thought. It was related to their roots, traditions, ancestors, values, and history. It is an issue of self-identification, strongly related to language, beliefs and religion. Yet it was also linked with everyday practices such as agriculture, dancing, music, clothing, customs, behaviour and lifestyle. From the perceptions of young people form North Potosí and Chaco elements of language, history, and agriculture were considered in the study design (See section 3.3.6)

2.3.4 An analytical framework to analyse and assess empowerment

The framework presented in this section derives from the power-empowerment analysis presented section 2.2.5. It integrates the concepts of agency and structure (See section 2.3.2) and their measurement variables into the spheres of power occurrence presented in Figure 2.2. Additionally, elements of history and culture are considered as manifestations that influence elements of structure and agency.

Evaluating and analysing empowerment is a highly complex exercise. It needs to capture dynamic processes and changes in relational patterns that are context specific as well as less tangible and less predictable than conventional poverty measures (Uphoff and Cornell University. Rural Development Committee., 1986). Furthermore, it needs to capture processes that take place at the individual and household levels but also needs to reflect processes at a collective level and from multidimensional perspectives (Kabeer, 1994). The structural level must be considered due to its direct effect and also both the individual and collective levels. For this purpose a clear characterization of empowerment is required prior to the establishment of indicators that can assess change in the process. Given the multidimensional and cross-sectorial nature of empowerment, and the strong influence of context variation across time and space (Alsop et al., 2006), the attribution of causality and the comparability of information obtained are highly sensitive issues. These limitations require strong emphasis on different research techniques that provide more interpretive and explanatory information.

According to Alsop, assessment of assets and structures can contribute to understand the empowerment process, but direct indicators need to be used to measure degrees of

empowerment at the interface of agency and structure. Based on this premise an analytical framework needs to consider direct and indirect measures of empowerment.

2.3.4.1 Direct measures of empowerment

To measure empowerment directly, three main indicators have been used to reflect degrees or levels of empowerment: first, the existence or availability of a choice; second, the actual usage of the choice; and thirdly, whether the outcome of the choice exercised is the expected (Alsop et al., 2006). Similarly Kabeer has identified three dimensions or moments to depict the ability to exercise strategic life choices: resources or pre–conditions, agency as a process and achievements as outcomes (Friedman - Rudovsky, 2008). Following Alsop and Kabeer's perspectives on levels or dimensions of empowerment Table 2.1 describes the proposed framework for analysis.

Table 2.1 Proposed framework for the analysis of empowerment levels

Level of empowerment	Description
Opportunity	The existence or availability of choices. It refers to resources or pre-conditions necessary for the exercise of choice. For example: a farmer cannot choose to sell his product if he produces no surplus or if there is no physical access to a market.
Praxis	The actual usage of choice, the exercise of an actor's agency. It implies a second level. Following our previous example it would imply the actual choice of a farmer to sell his product provided that he has produced surplus and that he has access to markets.
Outcome	It refers to the result of the actual exercise of choice, the achievement that can be both positive and/or negative. In our marketing example it may mean that the farmer who chose to sell his product has generated additional income and has bought new equipment. It may also mean that the community dislikes his advancement above the rest and socially marginalizes him.*

* Source: Personal elaboration based on the constructs of Alsop and Kabeer and personal field experience on seed markets in Villazon at Programa Nacional de Semillas – Bolivia in 2002. ALSOP, R., BERTELSEN, M. F. & HOLLAND, J. 2006. *Empowerment in practice : from analysis to implementation,* Washington, DC, World Bank, KABEER, N. 1999. The Conditions and Consequences of Choice: Reflections on the Measurement of Women's Empowerment.: United Nations Research Institute for Social Development.

Direct measures of empowerment based on life choices will have to reflect on the specific actions that a person performs. The level of empowerment experienced by a farmer when choosing a farming technique will not be the same as when negotiating with intermediaries in

a market. This issue is addressed by Alsop through the incorporation of domains and sub-domains (Alsop et al., 2006) that attempt to refine the analysis. More important than the actual domains identified by the authors is the principle of refinement that can be used to identify domains and sub-domains of analysis based on the nature and objectives of the intervention initiatives that are to be evaluated. Table 2.2 presents a detail of domains and sub-domains of analysis for innovation projects on agricultural technology and market linkages.

Table 2.2. Domains for direct empowerment analysis

Domain	Sub-domain	Description
Agriculture and Development services	Education and health services	Basic and specialized health and education services.
	Agricultural services and technology	Service provision on agricultural technology issues.
Market Services	Market Linkages	Technical assistance for processing and marketing of agricultural products, credit, bulking and assembly, physical access to markets and facilities.

Source: Personal elaboration

Direct measures of empowerment can provide a general overview of the situation that people are facing in terms of empowerment yet this result is an outcome of different contextual situations that interact to enable or disable their empowerment. For this reason other indirect measures of empowerment are needed in order to depict the situations and contexts that enable its occurrence.

2.3.4.2 Indirect measures of empowerment

The level or degree of empowerment is related to agency and structure (See Sections 2.3.2.1 and 2.3.2.1), and with history and culture (See sections 2.3.3.1 and 2.3.3.1). The agency of an actor and its conscious or unconscious manifestations is determined by the actor's asset endowment (Alsop et al., 2005) and by the norms and governing rules (Giddens, 1984). Assets are resources that enable actors to take advantage of opportunities and to protect themselves from shocks (Joyce and Lopiparo, 2005). Based on this premise Table 2.3 presents a proposed set of assets to evaluate empowerment (Alsop et al., 2006) and their description.

Table 2.3. Types of assets and their description

Types of assets	Description
Psychological	Perceptions of the self: self-esteem, self-worth, and the capacity to envision change.
Informational	Information access and sources.
Material	Productive resources in the forms of equipment, infrastructure and other material stocks.
Social	Intangible assets that relate to social relations. It includes collective action, solidarity, reciprocity and trust.
Financial	The financial resources available for people (credit, savings, etc.)
Human	It relates to conditions that determine the situation of an individual such as health and education.
Organizational	Rules, norms and obligations embedded in the operation of organizations.*

* Source: Personal elaboration based on defining elements from: ALSOP, R., BERTELSEN, M. F. & HOLLAND, J. 2006. *Empowerment in practice : from analysis to implementation,* Washington, DC, World Bank, MOSER, C. O. N. 2006. Asset-based Approaches to Poverty Reduction in a Globalized Context. An introduction to the asset accumulation policy and summary of workshop findings. Washington, DC: The Brookings Intitution; Global Economy and Development Working Paper.

These assets relate to manifestations of agency and structure, and also to different aspects or areas of life. Some authors have differentiated three kinds of interconnected empowerment: social, economic and political (Shultz, 2000) that are useful when analysis is based on assets because of the emphasis posed on economic elements. Nevertheless, to include the individual perceptions of the self along with cultural and historical effects on the conscious and unconscious behaviour of agents, it is necessary to consider the broader spheres of life where power is exercised 'individual, collective and structural' (See Section 2.2.5 and Figure 2.2). Table 2.4 presents the different types of assets embedded in the spheres of life where power is exercised.

Table 2.4. Types of assets embedded in the spheres of life where power is exercised

Sphere of Life	Types of assets
Individual level	Psychological assets Informational assets Material assets Financial assets Human assets
Collective level	Social assets
Structural level	Organizational assets

Sources: Personal elaboration integrating the concept of asset endowments and spheres of life where power occurs

Although concepts and elements for evaluation may be clearly defined, context is crucial and there is no general evaluation model that can be applied across all contexts (Fabricant and Hicks, 2013). The spheres at which empowerment occurs and the particularities of an in-depth research exercise depend on the purpose of the study and the specific country context. Context-specific variables and values are important since empowerment implies changing power relations among people or groups. As such, it is a relational concept and neither the actors nor the relationships are likely to be the same in any two different contexts or countries, so any measurement has to be based on locally defined variables and values (Alsop et al., 2006). Elements of history and culture need to be incorporated in the structural sphere to aid analysis.

For the present study the analysis of empowerment is based on two basic aspects, the level of general empowerment, and the spheres or types of empowerment processes that take place. Variables used to determine the level of empowerment will follow a sequence of opportunity, praxis and outcome (See Table 2.1). To determine the situation of different spheres or types of empowerment processes, asset endowments (See Table 2.4), history and culture, embedded in specific variables need to be considered as proxies of empowerment in each sphere. Table 2.5 details the types of variables considered for both the measurement of level and type of empowerment.

Table 2.5. Types of variables considered to assess level and type of empowerment

Direct Measures of Empowerment	**LEVEL OF EMPOWERMENT**		
	OPPORTUNITY	PRAXIS	OUTCOME
	Domain: Agriculture and Development Services		
	Existence of space to participate	Participation in development processes	Response to participation
	Domain: Market Services		
	Existence of market	Market involvement	Market outcomes
Indirect Measures of Empowerment	**SPHERES OF OCCURRENCE – TYPE OF EMPOWERMENT**		
	INDIVIDUAL	COLLECTIVE	STRUCTURAL
	Psychological assets • Self-perception Information assets • Communication and transportation Material assets • Land, tools and goods Financial assets • Income	Social assets • Organization membership • Collective action in agriculture and markets • Solidarity and reciprocity	Organizational assets • Leadership • Decision Making • Organizational linkages • Obligations History • Organizations • Productive patterns • Services • Power holding Culture • Organizations • Ethnicity, religion and language

Source: Personal elaboration

This general framework for analysis will be further explained in Chapter 3, in relation to the specific research questions that guide this study.

2.4 Participatory Methods and PM&E

The raising of awareness or consciousness and participation for development emerged with Paulo Freire through his theories and writings about education for liberation (Freire, 2009, Freire and Mellado, 2005) and were developed into methodologies and practices for development through the work of Fals Borda, Chambers, Hall and other practitioners on participatory approaches (Fals-Borda, 1981, Chambers, 1983, Hall, 2005) Participatory approaches, methods and tools increasingly evolved during the 1980s, through publications that evidenced the need to address beneficiaries' agendas and take their priorities into account if true development is to be achieved (Chambers, 1984, Chambers, 1989).

Previous sections of this chapter have discussed power and empowerment, their conceptualization, operation and measurement as a route to the achievement of wellbeing. This section of the conceptual framework will examine the evolution of participatory approaches and the long standing debate around them. It will also observe Participatory Monitoring and Evaluation, the emergence of the concept, the debate that surrounds it, its particularities and its instrumental use as a tool that seeks to address power issues in participatory processes. Insights on PM&E theory will be presented and specific details on the method used in the Bolivian cases studied will be described.

2.4.1 Participatory approaches in a long standing debate

The concept of participation as a novel development approach to address farmers' needs and the formulation and implementation of agricultural research agendas based on those needs began with the "Farmer First" workshop in 1987 and the later publication of the "Farmer First" book. This material questioned the process of agricultural technology transfer, in an attempt to explore and generate, through participation, new and more effective approaches to optimize agricultural technology and ultimately development (Chambers, 1989). Two main lines of work developed through the work of social sciences scholars and development practitioners in the field. On one hand Rapid Rural Appraisal (RRA) was devised as a fast, cost-effective tool to assess people's conditions in the field (Moris et al., 1993). On the other hand, Participatory Research or Participatory Action Research (PAR) was formulated to empower rural people by providing them with tools for analysis and awareness creation (Hall, 2005). The groundwork for both streams was the assumption that people living within a situation had a better understanding of the many issues facing them than outsider experts (Chambers, 1983). This view intended to overturn decades of post-colonial development driven by Western hegemonic values and institutions. Furthermore, this premise led to further expansion of the participatory approach in the 1990s and the development of new tools for its application in the field.

While some praised the new participatory approach for technology transfer (World Bank, 1994), others argued that the approach failed to consider the socio-cultural and political dimension of knowledge creation, innovation, transmission and use within rural societies and scientific organizations; and that it ultimately failed to connect theory and practice (Rahnema, 1990, Bentley, 1994, Eyburn and Ladbury, 1995). In the light of these arguments a second workshop took place seeking to engage with critiques and foster learning around participatory practice (Chambers, 1994). The book "Beyond Farmer First" presented the arguments of this

workshop outlining an agenda for critical reflection and action in order to develop better approaches to participation in agricultural research and extension (Scoones et al., 1994). New approaches sought to move beyond Rapid Rural Appraisal and Participatory Research as tools for technology transfer, to address more fundamental critiques in terms of power and the pluralism of knowledge (Scoones and Thompson, 1994), power relations, and institutional culture (Chambers, 1994).

With the expansion of participatory approaches, questions of their validity emerged rapidly in terms of their effectiveness to produce people-centred approaches with high involvement of beneficiaries in decision-making (Cooke, 2001). While internal critiques from practitioners of participation focused on methodological limitations (Guijt and Cornwall, 1995), other critiques focused on the overvaluation of local knowledge, self-determination and localism (Mohan and Stokke, 2000), the lack of methods and approaches to address power structures (Hildyard et al., 2001, Taylor, 2001, Cleaver, 1999), and more fundamental critiques to the politics of the participatory discourse (Henkel and Stirrat, 2001, Mosse, 2003, Mosse, 2004). The continued interaction gave way to a debate that has grown over two decades nurturing an evolution of participatory approaches to address issues of power, decision making and development aid. Throughout the process, empowerment, a term coined in feminist thinking (Rowlands, 1995) became embedded in the interpretation and analysis of participatory approaches. Participatory Monitoring and Evaluation was one of the methods that emerged as part of this evolution of participatory approaches and, due to its relation with the analysis of this thesis, will be addressed in more detail in the following sections.

2.4.2 Participatory Monitoring and Evaluation, the roots and evolution

Evaluation has played an important role in development interventions. The concept of evaluation was first introduced in the 1930s within the field of education and later spread through different disciplines (Dutta, 2011). In the development landscape evaluation flourished in the 1970s and was applied in several countries to large development programs, governmental interventions as well as institutions and organizations. During this initial period the emphasis of evaluation was on the final achievement of goals and the use of resources. Gradually this perception evolved to incorporate the processes of interventions thus becoming Monitoring and Evaluation (M&E). M&E was visualized as an iterative analysis that sought to provide feedback during the implementation process in order to enhance final results. Gradually the vision of an evaluation process that provided accountability to funding agencies has shifted towards accountability to primary stakeholders. This shift has enabled the creation

of different methods and tools to produce a "Participatory Monitoring and Evaluation" process that includes the vision of primary stakeholders.

Different factors have influenced the development of PM&E in Latin America, and have produced a clear differentiation from other conventional PM&E approaches. The evolution of M&E towards PM&E in Latin America took place gradually through three main trends: first, donor pressure for accountability and for signs of change in poverty reduction; second, the increasing emphasis on empowerment, development from the grassroots, participation and strengthening of civil society; and thirdly, the need for financial and operational accountability to both funders and primary stakeholders (Silliman, 2001) Nevertheless, there is also a difference in the degree of participation of primary stakeholders in the M&E process that must be taken into consideration.

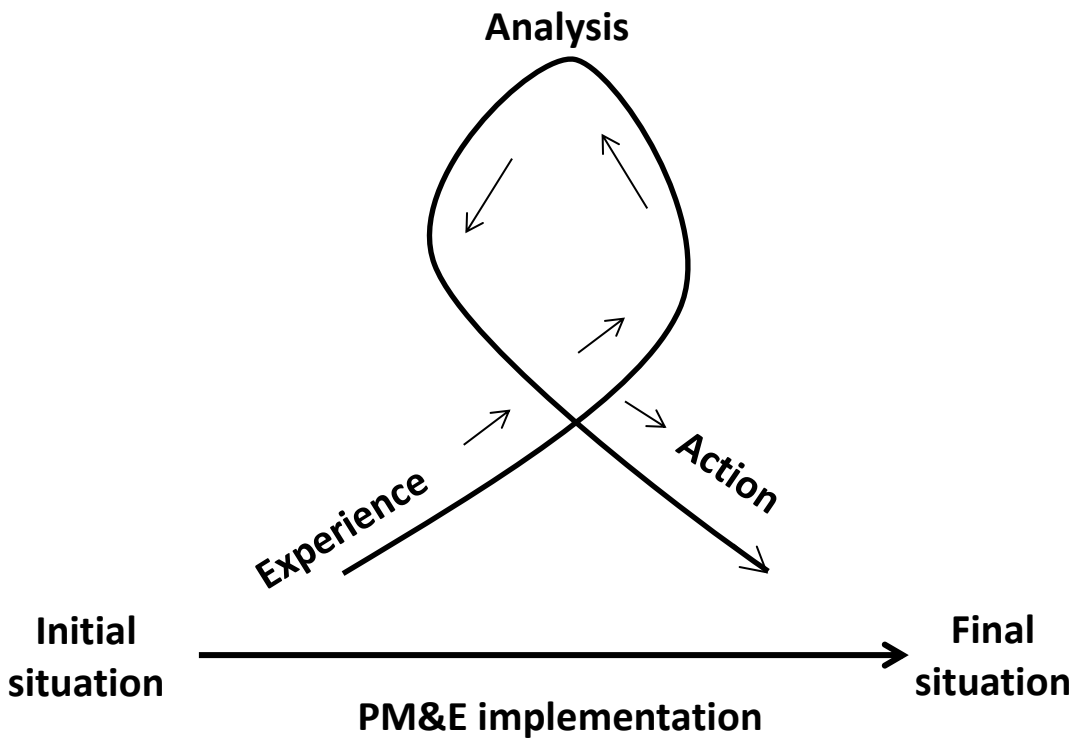
The main difference among types of participation is the degree of stakeholder involvement in decision making. Some M&E processes incorporate participatory appraisal methods basically to extract information from primary stakeholders in order to incorporate them in the evaluation (Silliman, 2001) but the main decision making on the purpose, process and outcome of the evaluation may still remain in the donor or the implementing agency. Thus there is a big difference between the empty or simple ritual of participation and the real power needed to affect the outcomes of the process (D'Andrade, 1995). An M&E process becomes participatory only when a major shift in decision making is undertaken. According to (Geertz, 1973) a PM&E process seeks a better understanding of local realities where primary stakeholders are fully involved in the decision making, and not only in the application of participatory tools. In PM&E, participation is central stage and articulates the definition of objectives, sources of information, analysis and final use of results (Bloom and Keil, 2001).

2.4.3 Definition and objectives of PM&E

The literature presents a broad range of conceptual definitions of PM&E; however, there are some common themes and concepts. The main convergence stems around stakeholder involvement, inclusion of local people and determination of the actions toward the achievement of expected results (Guijt and Gaventa, 1998). The PM&E process seeks to achieve both participation and empowerment through the application of four principles: participation, learning, negotiation and flexibility (Gandarillas M., 2006). Figure 2.5 reflects on the iterative process of learning from experience and analysis, and transforming it into action. This process promoted by PM&E is the basis of the method applied in the cases analysed by

this study. Furthermore, PM&E is a highly political exercise which necessarily addresses issues of equity, power and social transformation, thus its potential effect on empowerment processes.

Figure 2.5. PM&E as learning through experience, analysis and action



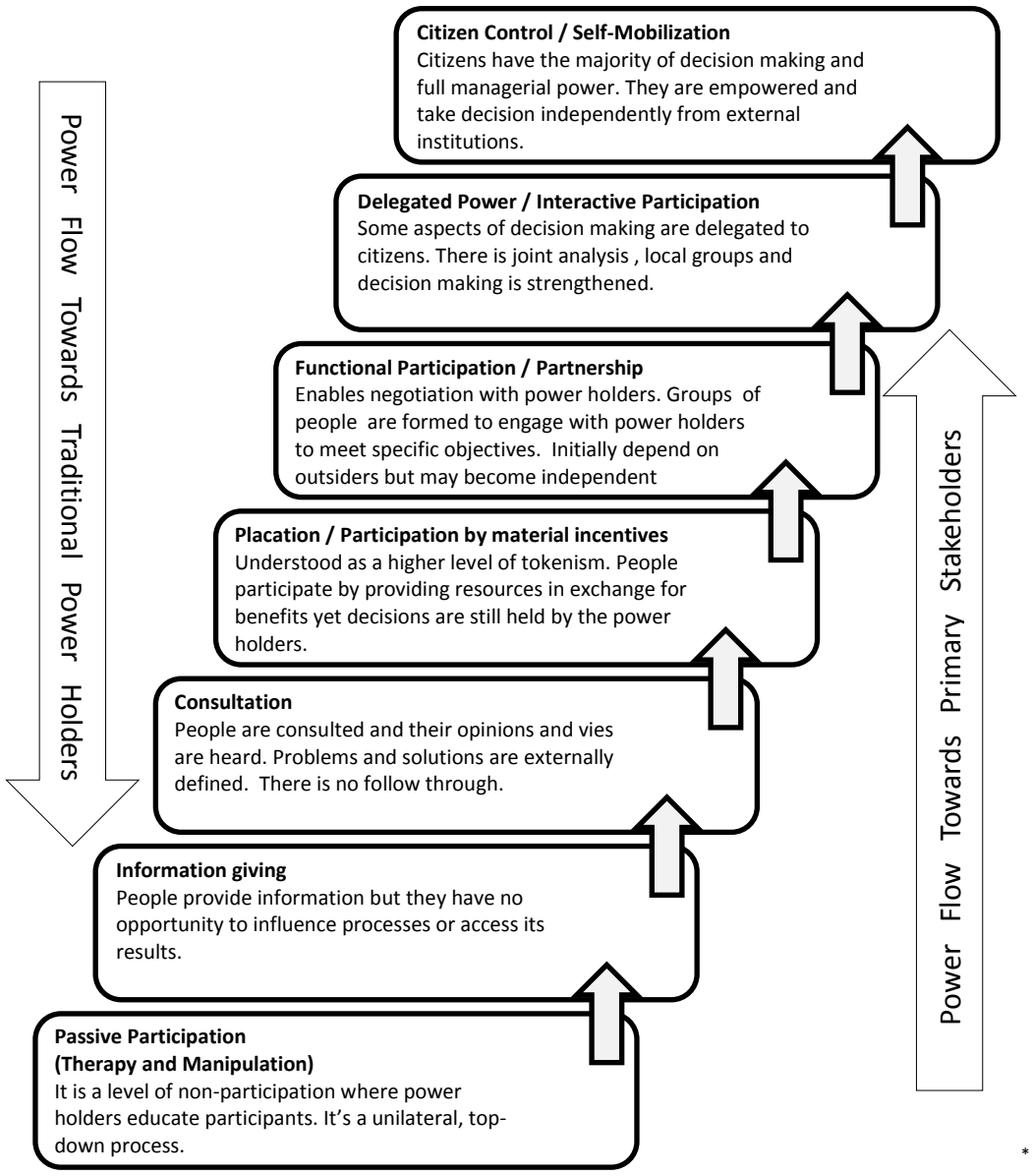
*

* Source: Adapted from GANDARILLAS, E., FERNANDEZ, J., ALMANZA, J. & POLAR, V. 2005. El seguimiento y evaluación participativa en el contexto de los proyectos de innovación tecnológica aplicada. *In:* ZAPATA, V., GANDARILLAS, E., HERNANDES, L. A., QUIROS, C. A., FERNANDEZ, J., POLAR, V. & ALMANZA, J. (eds.) *Metodologìas Participativas para la Innovación Tecnológica Agropecuaria.* Cochabamba: FoCam.

2.4.4 Marking the differences: Levels of participation and implications

There are different types of participation, yet participation without redistribution of power is but a continuation of the status quo (D'Andrade, 1995). Figure 2.6 illustrates the typologies of participation as integration of Arnstein's ladder and Pimbert and Pretty's types of participation (D'Andrade, 1995, Mosse, 2011a).

Figure 2.6. Typologies of participation in relation to power holding



[*] Adapted from: ARNSTEIN, S. R. 1969. A Ladder Of Citizen Participation. *Journal of the American Institute of Planners,* 35, PIMBERT, M. & PRETTY, J. N. 1995. Parks, People and Professionals: Putting "Participation" into Protected Area Management. UNRISD Discussion Paper.

The essential difference between types of participation is the degree of power redistribution. Based on this principle Arnstein presents a ladder with a typology of eight levels of participation that depicts the situation in terms of power holding. In parallel Pimbert and Pretty describe seven types of participation according to their characteristics. These typologies illustrate the flow of power that differentiates real participation from non-participation. (See figure 2.6)

Different factors determine the level of participation achieved in a particular PM&E initiative. These factors can be summarized through five central questions "Who, What, How, When and Why" used to differentiate PM&E processes (Mosse, 2011b). Higher levels of participation are achieved in a PM&E process when primary stakeholders are the ones defining responses to all these questions. Who defines or influences the factors that determine the level of participation achieved is a matter that goes beyond the methods and approaches and into issues of political economy.

2.4.5 The political-economy of participatory monitoring and evaluation within the policy framework of development aid

The different typologies of participation and their relation to power holding is an issue that permeates the debate about the effectiveness and implications of participatory approaches. The level of participation and the extent of the power flow towards primary stakeholders are more related to the policy discourse and to the different levels of interest involved in the intervention (Mosse, 2003), than to the approaches and methods alone.

According to Mosse, the primary function of policy is to mobilize an maintain political support, thus the importance of a policy lies in the alliances, coalitions and consensus they allow within and between actors (Mosse, 2003). Beyond the perspectives of policy, there are different layers of institutional practices involved through the execution of projects. Different interests and perspectives that emerge from the social life of projects, organizations and professionals (Mosse, 2004), interact in the actual practice of the project or intervention.

The last two decades have seen the exponential growth of development policies with a participatory focus. These policies concentrate on development through bottom-up, community-driven or indigenous approaches. While advocates of the participatory policies emphasize on its gradual evolution and positive outcomes (Scoones et al., 1994, Mansuri and Rao, 2013, Thrupp et al., 1994), critiques argue that it only provides more effective instruments with which to advance external interests and agendas while further concealing the agency of outsiders (Cleaver, 2004, Cooke, 2001, Lewis and Mosse, 2006, Mosse, 2001, Mosse, 2011a).

Policy discourse and the agendas of actors are central issues that affect the actual operation of participatory approaches and their outcomes in the field. Drawing from personal experience as a social scientist working with participatory methods in the World Bank, David Mosse

suggests that policies are shaped by institutional exigencies and therefore have functions in protecting specific interests (Mosse, 2001). In time, it is not policy ideas that ultimately determine the outcome of a participatory intervention, but the realities of development funding and cooperation (Mosse, 2003), shaped by the interests of the different actors with different statuses, varying resources and dissimilar goals (Lewis and Mosse, 2006), These influences coalesce with the policy making and project design process (Bebbington, 2004). Thus a final analysis of the outcomes of the PM&E implementation needs to consider the conditions under which it occurs (Bebbington, 2004), both the policy framework and the institutional cultures of the actors involved throughout the implementation process. More empirical research needs to be done into how development works and whether it succeeds (Lewis and Mosse, 2006), along with fuller and more honest political-economy analysis of the intervention (Copestake and Williams, 2014). This will enable a broader and holistic understanding of context and processes that will aid the design and implementation of future interventions.

2.4.6 Participatory Monitoring and Evaluation PM&E as a tool

The previous section has elaborated on the debate around policy frameworks and institutional cultures and opened the door for further perspectives in the specific cases analysed in this research. This section will discuss participatory methods as tools for empowerment, focusing on PM&E and the debate around it.

Development agencies have linked the term empowerment to participation in order to reflect both an objective as well as a tool for its accomplishment (Ferreira et al., 2005, UN, 1993, World Bank., 2000). Nevertheless, there has been considerable argument around the instrumental use of participation (Cornwall and Brock, 2005, Narayanan, 2003, Puri, 2004) as a validating tool for project management (Mosse, 2001, Mosse, 2003) rather than an empowering one (Bartlett, 2008). There is also questioning around the scope and limitations of its empowering effects (Cleaver, 2001, Cornwall and Brock, 2005). Subjecting participatory methods to rigorous critical analysis is an important research exercise that needs to be addressed (Cleaver, 2004, Cooke, 2001, Cleaver, 2001).

Current thinking about participation and development has evolved apart from critical conceptualization and analysis of structure and agency, mainly focusing on institutionalism, organizations and collective action as central elements of participatory approaches (Cleaver, 2001, Cleaver, 2004). Although social structure is perceived as opportunity and constraint for

empowerment (Alsop et al., 2005, Narayan-Parker, 2006), the role of structure and agency in shaping participation and its outcomes needs further analysis (Cleaver, 2001, Cleaver, 2004). Furthermore, considerations of structure focus mainly on legal frameworks and institutions (Alsop et al., 2005, Narayan-Parker, 2006), overlooking the role of history and culture as components of structure and factors that influence agency.

Above the general debate around participatory methods as tools for empowerment and development, lies PM&E, as both a form of development practice and a management tool. Its alleged objectives of enhancing primary stakeholder's capacity to plan, participate in decision making, and learn from experiences (Estrella and Gaventa, 1998) address a potential divergence between what the donor or implementer expects from the method and the interests and motivations of the primary stakeholders. It is this dichotomy of expectations that shapes the practice of the method and that in turn merges with the discussion on the political economy of PM&E presented in Section 2.4.5. A detailed elaboration about the particularities of the method as a tool will be presented in Section 3.8. To further contextualize participation and the PM&E method, the next section will present a chronology of participatory methods in Bolivia along with current political and institutional trends.

2.4.7 Participation, and Participatory Methods current trends in Bolivia

The Bolivian government aligning itself with the newest development trends approved in 1995 the "Popular Participation Law". This law proposes a framework that opened legal spaces for organized groups and communities to work for their own development. The law proved to be successful in some cases and a failure in many others (PADEM, 2003). Nevertheless, participation both in the global as well as in the Bolivian context was more of an instrument for development and was broken down into a series of tools that enabled a small share of decisions to be transferred to the people while keeping the basic analytical and decision making structures within the sphere of influence of policy makers, researchers and development institutions of different types and scopes. In this context, participation lost its political connotation as defined and expounded in the "Participatory Development Theory" (Mosse, 2003).

Participative approaches to development research and management in Latin America and the Andean Region during the last decade have spread considerably through the work of national, regional and international organizations. The International Center for Tropical Agriculture (CIAT) was one of the first research institutions in the region that introduced participatory

research that sought to integrate research with the needs of technology end-users (Johnson et al., 2003). This approach was also explored and developed by the International Maize and Wheat Improvement Centre (CIMMYT)[56] (Fujisaka, 1994, Bellon, 2001). The first tools and approaches developed focused mainly on participatory technology evaluation (Farrington and Martin, 1988, Bellon, 2001, Ashby and Sperling, 1995) but this approach gradually grew to include farmers as main actors in the research process(Association of CIALs of Honduras and Classen, 2008). CIAT spread through the region the famous 'Local Agricultural Research Committees' or CIAL[57] method that promoted locally based research (Ashby, 2000, Quiros Torres et al., 2004). The principles of the method along with some of its tools gradually advanced in the region and nurtured a culture of participation that spread through national and regional development institutions from both the public and private sectors.

The International Potato Center (CIP) followed the trend, also developing a series of tools and methods to promote participatory research and technology uptake among a series of partners in the Andean Region. CIP's first experiences with participatory methods were directed to developing acceptable agricultural technology and promoting co-operation with farmers (Rhoades and Booth, 1982), but gradually moved forward to include new methods and approaches for participatory research (Thiele, 2000). CIP's most recent work has focused on participatory approaches to promote multi-stakeholder involvement to support research innovation, market linkages and development (Thiele et al., 2011). The Participatory Market Chain Approach (PMCA) is one of the methodologies that emerged to address this multi-stakeholder involvement through a 'systems' process (Bernet et al., 2011, Barnet et al., 2006) in what has been called a 'new form of collective action'(Devaux et al., 2009).

In Bolivia, the spread of participation brought by outside initiatives echoed the cultural heritage of the country. Strong historical and cultural traditions of equity and solidarity are consistent with these notions of participation and have nurtured ongoing social transformation processes. So far, despite the transformation process that is taking place and widespread recognition of participation as a contributory element, there are also many voices that claim this as a way of dictatorship. It was called the labour movement dictatorship (Mirtenbaum, 2005) or "Dictadura Sindical"[58], a term that reflects that local syndicate leaders and higher

[56] Acronym in Spanish: Centro Internacional de Mejoramiento de Maíz y Trigo
[57] Acronym in Spanish: Comité de investigación agrícola local
[58] The term has been widely disseminated in the Bolivian context since 2003 and is mainly used by government opposition from the right. Although the translation into English leads one to think of the term as envisaged and used in soviet socialism, the actual meaning in the Bolivian context is different.

level aggregations of these organizations actually control decisions without the real participation of the people. Nevertheless, both the contribution of participatory methods and the lack of real participation with the end-users are elements that need to be proved and that will in turn shed light on new trends for development approaches that focus on power relations.

Among many initiatives to promote participation and empowerment in Bolivia, the introduction of SEP, a variant of Participatory Monitoring and Evaluation for community based project management had strong reverberations with, and demand among local organizations (Lewis, 2011, Thrupp et al., 1994). Due to the apparent success of the method (Thrupp et al., 1994) in contributing to fulfil the needs of the poor according to their own perceptions of wellbeing (Gandarillas M., 2006), it is nowadays being widely spread and disseminated both in Bolivia and through the Andean region. After five years of its initial implementation in Bolivia it is important to analyse the changes promoted by the application of PM&E. However it is important not only to see what has changed but to look qualitatively at the process of empowerment and its dimensions. Revealing the role of the participatory method within a specific policy framework and organizational cultures will aid in the design of future programs that respond to the call of the Bolivian population for greater equity, and that in turn foster a sustainable process of wellbeing as conceived by poor people.

The term reflects an intermediate level of power [that of syndicate leaders] that breaks direct connection between workers and decision makers.

Chapter 3. RESEARCH DESIGN AND METHODS

This chapter presents the research questions and methods applied in a longitudinal comparative case study focused on understanding the relationship of power-empowerment and participation in two cultural and historically different contexts in Bolivia. The first two sections will clarify the relationship between the study and the Cambio Andino Program along with the scope and limitations of the study. Section 3 will present a description of the two study sites selected in Bolivia. Sections 4 and 5 will present the specific participatory method, details of its implementation process and elements of quality control. The actual research design will be presented in sections 6 and 7. Details on case study selection will be presented in section 8. Sample size is discussed in section 9, and tools for data collection in section 10. Finally, section 11 closes the chapter with some ethical considerations addressed throughout the study.

3.1 The study and its relation with the Cambio Andino Program

This research was financially supported by the Cambio Andino program operation in Bolivia. Cambio Andino, funded by DfID in Latin America, was a research initiative that sought to foster the understanding of social and organizational factors that affect how the poor benefit from agricultural innovation in order to improve the effectiveness of participatory methodologies for enhancing the inclusion of the poor (Chambers, 1989). The program supported 20 projects with the implementation of participatory methodologies in Bolivia, Colombia, Ecuador and Peru (Hildyard et al., 2001).

For DfID programs, empowerment was both an objective and a process(Scoones and Thompson, 1994). Since 1997, DfID and British policy on international aid supported empowerment and political representation (Estrella and Gaventa, 1998). Since 2000 DfID has also given high priority to improving donor coordination and harmonisation, playing a key role in donor-government working groups particularly in Bolivia (Mansuri and Rao, 2013). Through this focus on empowerment and political representation DfID funded the FoCam project in Bolivia. This research initiative promoted the adaptation and use of participatory monitoring and evaluation to enhance the inclusion of poor farmers in agricultural services for technology innovation, linking their demands with research supply and increasing the accountability of research providers (Mosse, 2001). The success of this initiative that showed a broad range of cases where farmers were linking with agricultural innovation services and holding service

providers accountable (Thrupp et al., 1994), gave way to a broader dissemination of participatory methodologies in Bolivia and the Andean Region.

The Andes Regional Program called "National Agricultural Innovation Systems that Work for the Poor: Building on the Bolivian Experience", later called Cambio Andino, was funded by DfID from 2006 to 2010 and sought to test and adapt participatory monitoring and evaluation and other participatory methodologies in different countries of the Andean region (Bebbington, 2004). It was within the Cambio Andino Program that this research was designed and implemented. The researcher of this study was part of the Cambio Andino team in Bolivia, operating as national coordinator of the participatory methodologies component. This position enabled an overview of all cases that applied the SEP methodology in Bolivia, and a continuous interaction with Cambio Andino field facilitators in charge of providing support for the implementation of the SEP methodology. The original ideas and tools that served as the basis for the design of this study emerged from the interaction of the main researcher with the Cambio Andino Research Coordinator. Additionally, due to its role as national coordinator of the participatory methodologies component and to its part in Cambio Andino's research, the main researcher of this study was also part of the team that reported Cambio Andino in various national and regional publications. The role of the researcher and some ethical considerations emerging from it will be further discussed in sections 3.10 and 3.11.

3.2 Research problem and questions

The general research problem that emerges from literature on participation and empowerment and from the context of development policies in Bolivia can be summarized in the following question:

> How do participation and empowerment relate to each other under environmentally, culturally and historically different contexts?

To ground the analysis of this problem two controlling factors were considered. The first is reducing the broad spectrum of participatory methods to the analysis of a specific method, a variant of Participatory Monitoring and Evaluation, denominated SEP for its Spanish acronym. The second is working within the specific context of Bolivia and the agricultural innovation sector, in two culturally and historically contrasting sites.

In order to guide the analysis the following research questions were proposed:

R.Q.1. How does the exercise of participation through SEP affect the sense of empowerment within the agricultural technology innovation sector, in two contrasting sites of Bolivia?

R.Q.2. What is the effect of participation through SEP on structure and agency as components of empowerment within the agricultural technology innovation sector, in two contrasting sites of Bolivia?

R.Q.3. How do culture and history affect the outcomes of participatory processes on empowerment within the agricultural technology innovation sector, in two contrasting sites of Bolivia?

3.3 Research Approach and Design

To address the research questions presented above, some specific assumptions on epistemology were made in order to select the most appropriate research methods. This section presents details of the four basic elements of the research process (Crotty, 1998) and of the different choices made to address the research. It elaborates on the pertinence of the combination of methods, on the question of attribution, and later addresses the variables analysed for each research questions and the tools for data collection.

3.3.1 Knowledge framework

Some specific epistemological assumptions were made to outline a structured knowledge framework to undertake the present research. These assumptions were framed in four basic elements: epistemology, theoretical perspective , methodology and methods (Crotty, 1998). These elements provide a structure to understand the research process and the assumptions embedded in the methods used (Feast and Melles, 2010).

3.3.1.1 Epistemology

The epistemological view selected for this piece of research is "**Objectivism"**, as it states that things exist as meaningful entities, having truth and meaning residing in them as objects (Crotty, 1998). Truth and meaning about things in objectivism can be attained through careful scientific research. In this study empowerment was conceived as a personal perception that can be assessed at the individual level. These individual measures can be aggregated to observe changes in perceptions of empowerment due to the influence of specific factors such as time, interventions, history, culture and context, among others.

3.3.1.2 Theoretical perspective

The philosophical stance that informs methodology and provides a context for the research process is the theoretical perspective (Crotty, 1998). This research grounded its logic and criteria on the "**Post-positivist"** perspective (Grix, 2004, Ryan, 2006). It visualized empowerment, as a personal perception, influenced by different factors that thus need to be context grounded and holistically observed. The research therefore had an open-ended exploratory character.

3.3.1.3 Methodology

The main focus of the study was to evaluate if the agricultural technology interventions delivered with the support of a participatory method (PM&E) were successful in empowering local people according to their own perception. Therefore, the research design considered for the study was **"Evaluation Research"** (Bamberger, 2012, Bryman, 2012). The objective of using this methodology was to provide a useful feedback about the PM&E method and its contribution to empowerment, alongside its effects on structure and agency variables, after the implementation process. Therefore, the evaluation approach was summative in nature and focused on "**impact evaluation**" (Trochim, 2000) assessing the overall effects of the PM&E method implemented.

In recent years impact evaluation in development studies has been the axis of considerable debate over what it is meant to achieve (Guijt and Roche, 2014, Lensink, 2014, Picciotto, 2014) and the types of methods that need to be used (Bamberger, 2012, Guijt and Roche, 2014, White and Phillips, 2012, Camfield and Duvendack, 2014). While some argue for more economic approaches (Harrison, 2014), others state that economics is not the only perspective if one seeks to contribute meaningfully to improve learning, accountability and influence policy and practice (Guijt and Roche, 2014).

Much has been said about the potential contribution of impact evaluation to evidence-informed policy making and program design (Nutley et al., 2007, Bogenschneider and Corbett, 2011), yet today there are still considerable disconnects (Mosse, 2004) that limit the contribution of impact evaluation and evidence generated to inform and influence policy making (Bogenschneider and Corbett, 2011), thus limiting the utility of IE for policy making. On the other hand, policy making is not the only client or user of impact evaluation evidence. Determining who the end users of the information are (Guijt and Roche, 2014), is also an important factor to consider during the design of an impact evaluation.

The research was developed around a policy from the Bolivian government that promoted the use of participatory methods for technology innovation in the agricultural sector (Government of Bolivia, 2006), assuming that the use of these methods contributed to the empowerment of the population. This research seeks to relate results from the implementation of the PM&E method to initial policy claims about empowerment, grounded in the assumption that fair and objective evaluation processes contribute to accountability (Picciotto, 2014, Guijt and Roche, 2014). Although the research emerged from the establishment of a government policy, it was not promoted by policy makers and its results are of interest to different audiences, which include practitioners and methodologists of PM&E, institutions and actors promoting technology innovation in the region. Therefore, the methodological approach of the research was directed not only at finding out whether the intervention achieved the expected empowerment results, but also at understanding why it produced the outcomes it did (Picciotto, 2014).

The evaluation methodology incorporated a **longitudinal** approach to address differences between the perception of empowerment before (2008) and after the intervention (2011). Two groups were evaluated, one who had used the participatory approach a second group who had not used it. Furthermore, a **comparative** approach was used through the establishment of two differential sites, in order to understand the influence of context, culture and history.

3.3.1.4 Methods

A mixed–methods approach was chosen to undertake the study mainly because this approach is helpful in a set of particular situations (Bamberger, 2012) which were present in this study:

- Examining the interactions among complex and changing factors that influence empowerment processes
- Defining and measuring indicators of cultural and historical factors that influence the implementation of the PM&E method and empowerment.
- Capturing complex processes of organizational and behavioural change related to empowerment
- Taking into account the evolution of the empowerment process in response to the perceptions of end-users during the first stages of implementation of the PM&E method.
- To depict a process difficult to observe and perceive, that is, “empowerment”.

Furthermore, a combination of methods was chosen to allow triangulation and complementarity, to counteract method biases (Chambers, 2008, White and Phillips, 2012) and to clarify perspectives and causalities (Mosse, 2005) within apparently contradictory data. Further detail on the application of each individual method can be found in section 3.6.

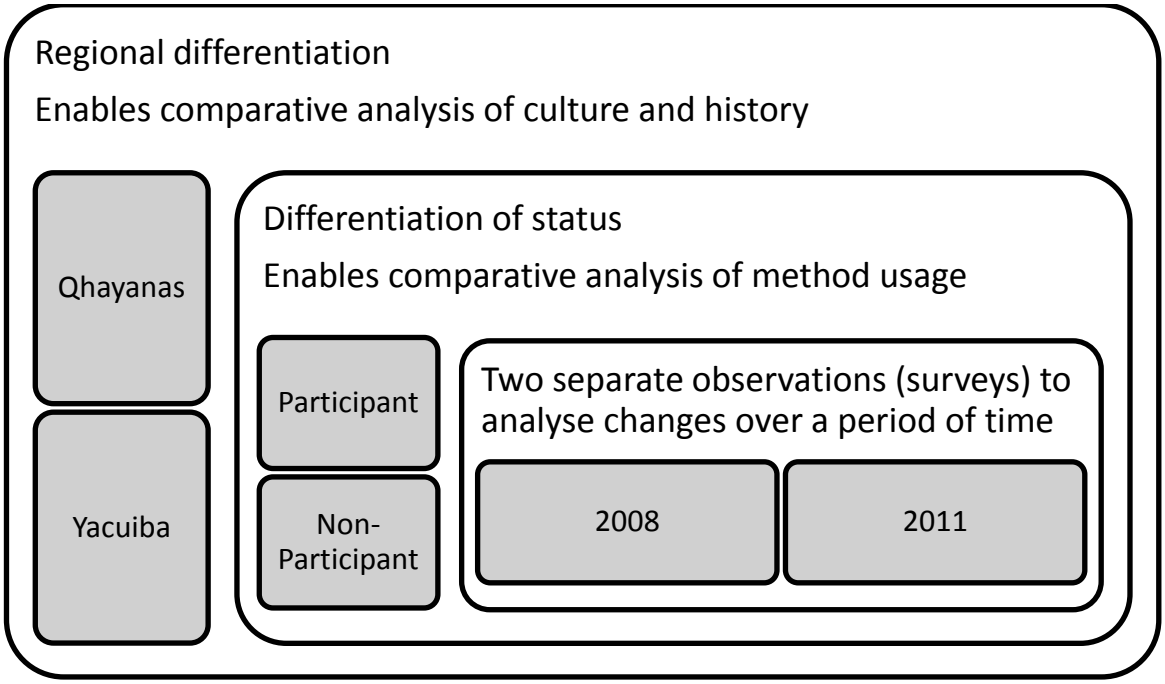
For the comparative analysis, the **case study** (Bryman, 2012) method was used. The cases were selected considering elements that proposed new ways to look at empowerment processes. More detail on the selection of cases or study sites and the criteria used can be found in section 3.4.

- To select the case studies two methods were applied.
    - Secondary data analysis was performed to identify cases that were applying a specific participatory method, and to outline the differences between them (See Appendix 2 and section 3.6.4).
    - A participatory workshop was conducted to define the scope of each case study and understand possible biases (See section 3.6.1 and Appendix 3)
- Once the cases were selected qualitative and quantitative methods of data collection were combined:
    - Informal interviews (See section 3.6.3)
    - Participant observation (See section3.6.3)
    - Secondary data analysis (See section3.6.4)

For the longitudinal analysis **survey questionnaires** were delivered to the selected case studies, at two different moments in time. The objective was to evaluate changes on the sense of empowerment, and changes in agency and structure variables over time. A survey questionnaire was delivered at two different moments in time. The first survey was collected in 2008 during the first stages of the participatory project implementation as baseline data. The second survey was collected in early 2011, months after the conclusion of the project implementation. Both survey questionnaires were the same (see Appendix 1). Further detail about the sampling can be found in section 3.5, and a detail of the survey application process in section 3.6.2.

To enable a second comparative analysis of the influence of participation and non-participation in the participatory initiative, families were categorized through self-determination during the base line survey. Farmers identified themselves as being participants or non-participants in the innovation projects delivered in each study site. Figure 3.1 shows a detail of the comparison groups formed at different levels.

Figure 3.1. Research design for longitudinal comparison



3.3.2 Method combination, validity, and attribution bias

There is rarely a single evaluation method that can capture the complexities of projects and programs. Therefore different evaluation frameworks and tools need to be combined to enhance the validity of research results (Bamberger, 2012). For the purpose of this research the mixed-methods approach was intended to enhance validity of the research results through five processes (Greene et al., 1989, Hesse-Biber, 2010):

- *Triangulation of evaluation findings*, by comparing information obtained through different methods. This refers to survey questionnaire data, secondary data, participant observation and information from informal interviews.
- *Development*, by using results from one method to help develop the sample for another. This is the specific case of the participatory workshop and secondary data analysis that were used to define the case studies, their geographic coverage or scope and the sample size.
- *Complementarity*, by extending the comprehensiveness of findings to broaden and deepen the understanding. This is applicable to secondary data analysis on history and context that were used to further the understanding of the results achieved through survey questionnaires.
- *Initiation*, when generating new insights into evaluation findings through divergences in results. This was particularly important when informal interviews to farmers

mentioned success of interventions while survey data showed a lower sense of empowerment. Participant observation and secondary data analysis enabled reconciliation in data and a shift in perspective.

- *Value diversity*, by incorporating diverse values to enhance the value dimension of evaluation. The analysis of secondary data to depict variables of history and culture was a key component in adding a different perspective for the evaluation of results from survey questionnaires and informal interviews.

Overall, these five processes that reflect the interaction of methods point towards higher validity of the research results through concurrence (Trochim, 2000). Furthermore, this concurrence of methods seeks also to reduce attribution bias.

The main assumption of attribution bias is that systematic errors are made when people evaluate behaviour. The most common type of attribution bias is the "fundamental attribution error" that occurs when a third party tries to attribute causality to others' actions. In this type of bias the role of dispositional factors is overemphasized while situational factors are ignored (Parkinson, 2012). The mixed-methods approach in this case was used to highlight situational factors in order to avoid this type of attribution bias. Other types of attribution bias such as actor-observer and self-serving bias will be addressed in Section 3.11 under limitations of the study.

3.3.3 Variables analysed for each research question

The data were analysed to allow an in-depth understanding of processes and interaction. Based on the evaluation and measurement framework presented in Chapter 2 (Section 2.3.4), the current section will present a detail of the variables analysed for each research question and the tools used for data collection.

Empowerment was analysed directly and indirectly through three components that were examined separately. One component is the sense of empowerment reported by families. This sense of empowerment is a direct measure of empowerment yet in itself it is a subjective measure since it depends entirely on the emotions, feelings and perceptions of families to the questions asked. The other two components are elements of agency and structure that contribute to a more objective asset-based analysis (Alsop et al., 2005) and reflect an indirect analysis of empowerment. Nevertheless it is important to highlight that although agency and structure are observed through specific asset-based components, people's responses are also influenced by subjectivity. Therefore, in order to avoid bias, data for the longitudinal

comparison (Guijt and Cornwall, 1995) were mainly drawn from survey information but was interpreted in the light of the historic and cultural background of the study sites, secondary data, and qualitative information from informal interviews and participant observation.

An overview of the variables considered to assess levels and types of empowerment through direct and indirect measures was presented in Chapter 2 (See Table 2.5). This framework is used to address the different research questions formulated in this study. The following three parts of this section will present each one of the research questions formulated, framing areas of analysis, variables and tools used for data collection.

3.3.4 Empowerment Perception

The perception of empowerment sensed by farmer families is the basis for the evaluation of the first research question. Direct measures of empowerment were analysed at three levels based on the ability to exercise choices (See section 2.3.4.1 and Table 2.1). Additionally these levels were visualized in the light of the different domains affected by the project intervention (See Chapter 2, Table 2.2) and where changes were expected to take place.

Table 3.1. Research Question 1. Variables and tools for data collection

"How does the exercise of participation through SEP affect the sense of empowerment within the agricultural technology innovation sector, in two contrasting sites of Bolivia?"

DOMAIN	**LEVEL OF EMPOWERMENT**		
	OPPORTUNITY	PRAXIS	OUTCOME
Agriculture and Development Services	*Existence of space to participate* • Education and health services (SQ, SD) • Agricultural services (SQ, SD)	*Participation in development* • Frequency of self-reported interactions with service providers to request changes (SQ, PO)	*Response to participation* • Frequency of positive responses achieved by interactions with service providers (SQ, PO)
Market Services	*Existence of market* • Market services (SQ, SD)	*Market involvement* • Frequency of self-reported interactions with market initiatives (SQ, PO)	*Market outcomes* • Frequency of positive outcomes achieved by interaction with the market (SQ, PO)

SQ = Survey questionnaire; SD = Secondary data; PO = Participant observation

The three levels of empowerment (Opportunity, Praxis and Outcomes) were evaluated based on the responses of farmer families to questions specifically formulated in relation to services in agriculture, development and market. Additionally some information was collected through participant observation and secondary data. These sources of information are integrated in the analysis to depict existing conditions in each level of empowerment.

3.3.5 Manifestations of agency and structure in the present

Agency and structure in the present were assessed indirectly through different asset-based components (See Table 2.3). These components were analysed with regard to the spheres of life where power is exercised (See Table 2.4).

The differentiation between variables embedded in agency or structure is not an easy task. In the wider debate about agency and structure (See Section 2.3.1) perceptions vary concerning what exactly can be understood by agency. Some authors even argue that agency is but an internal split of structure, being its manifestation almost entirely conditioned by the governing structures (Henkel and Stirrat, 2001). Despite these broad perceptions, a framework to analyse empowerment was established in relation to asset-based components (See section 2.3.4.2). These components are not a direct measure of empowerment but constitute an indirect measure due to their relation with the likelihood of empowerment (Alsop et al., 2005). Furthermore, this study differentiates the relation of the different types of assets with the individual, collective and structural spheres of life where power manifests. Yet due to the nature of the study and its emphasis on agricultural innovation, a reduced list of specific variables was identified.

Table 3.2. Research Question 2. Variables and tools for data collection

"How does the exercise of participation through SEP affect structure and agency as components of empowerment within the agricultural technology innovation sector, in two contrasting sites of Bolivia?"

Types of Assets	**SPHERES OF OCCURRENCE – TYPE OF EMPOWERMENT**	
	INDIVIDUAL	COLLECTIVE
Agency	Psychological assets • Perceived influence (SQ, II, PO) Information assets • Access to communication (SQ, SD) • Access to transportation (SQ, SD) Material assets • Land Tenure (SQ, SD, PO) • Tool Ownership (SQ,SD) • Access to durable goods (SQ, SD, PO) Financial assets • Family income (SQ)	Social assets • Membership in organizations (SQ, SD) • Benefits from organizations (SQ, SD) • Collective action o In agriculture (SQ, SD) o In market linkages (SQ, SD) • Solidarity and reciprocity o Perception of solidarity (SQ, SD) o Reciprocity experience (SQ, SD, II)
Structure		Organizational assets • Leadership election (SQ, SD) • Leadership-decision making (SQ, SD) • Membership payments (SQ, SD) • Formality status of the organization (SQ, SD) • Organization Linkages (SQ, SD)

SQ = Survey questionnaire; SD = Secondary data; PO = Participant observation; II = Informal interviews

3.3.6 History and Culture as manifestations of structure

Historical processes and cultural expressions are the reconstruction of past manifestations of structure and agency that over time create and re-create new structures (See Section 2.3.3). To visualize the effects of history and culture on current existing structures and eventually on empowerment through participation, the following variables of culture and history are considered for this study.

Table 3.3. Research Question 3. Variables and tools for data collection

How do culture and history affect the outcomes of participatory processes on empowerment within the agricultural technology innovation sector, in two contrasting sites of Bolivia?

Culture	History
A. Organization type (SQ, SD) B. Spoken languages (SQ, SD) C. Ethnic origin by self-determination (SD) D. Religion (SQ, SD) E. Traits of individualism and collectivism	A. Evolution of organization (SD) B. Power holding in agriculture throughout history (SD) C. Evolution of productive patterns in agriculture (SD) D. Agricultural technology and services throughout history (SD) E. Migration trends (SD)

SQ = Survey questionnaire; SD = Secondary data; PO = Participant observation

3.4 Selection of study sites

For the purpose of this study 2 cases were selected and followed through the two surveys conducted, one at the beginning of the intervention and the second one, once the intervention had ended. During the period between the initial and final surveys, qualitative data were collected in the form of participant observation and informal interviews. Additionally, secondary data were collected and analysed to depict the cultural and historic background of the study sites, along with other contextual characteristics. The following set of criteria was used to select the two cases for evaluation:

1. Accessibility to project sites.

   In accessibility two different elements were taken into consideration. The first was the distance between sites. Due to restrictions in funds, sites located in different Cambio Andino participant countries would have been an additional complication. Therefore cases in the same country (Bolivia) were prioritized. The second element was the accessibility to the sites themselves in terms of distance from urban areas and road quality throughout the year.
2. Application of the participatory methodology.

   The intervention of Cambio Andino focused on 6 types of participatory methodologies identified from a compilation of 81 participatory methodologies implemented in the Andean Region. The 20 pilot studies implemented by Cambio Andino Program covered all 6 methods individually or through combinations, in Bolivia, Ecuador, Peru and Colombia (See Appendix 2). This study focused only in the cases that applied a specific variant of Participatory Monitoring and Evaluation, denominated SEP after its Spanish

acronym. This method was considered, due to its alleged contribution to empowerment and technology innovation (Zapata et al., 2005, Gandarillas M., 2006). Cases in Bolivia were prioritized to focus on government policies that promote participation for empowerment and technology innovation.

3. Emphasis of the market component in the project.
   Some projects had a specific and strong emphasis on the market component and used specific methodologies for it. From the projects that used the SEP methodology, a contrast between high market emphasis and lower market emphasis was used for case selection.
4. Phase of project implementation in 2008.
   Projects that were at the initial phase of implementation in 2008 were preferred over projects that were in an advanced phase of implementation.
5. Contrasting elements between cases.
   Cases with the most significant differences between each other were preferred over cases with similar situations (geographic location, culture, historic background, language, crops, and public sector involvement).

A detail of all the projects supported by Cambio Andino and the situation with regards to some of the selection criteria is presented in Appendix 2.

During the first stages of research design and data collection 3 cases were selected. Through the implementation process this was reduced to two cases because one did not continue using the SEP method but adopted a different participatory method which ceased operation in the early stages. In the case excluded from the study, the team that operated the innovation project opted for a more market-oriented method called “Participatory Market Chain Approach” in-stead of the monitoring and evaluation alternative (SEP). Although this method successfully supported the identification of new market alternatives, it was discontinued in early stages mainly due to low productivity and lack of marketable surplus that became part of this study. Table 3.4 presents a detail of the characteristics of the two selected projects where the participatory method was being implemented and that became part of this study.

Table 3.4 Characteristics of the projects that are part of this study

Project	Detail of Project
Program of Maize and Groundnuts in Tarija (Chaco)	Previous experiences with the SEP methodology and an expressed demand for its implementation in the new project. • Agricultural technology innovation project with some emphasis on economic development and market linkages • Technology focused on maize and groundnuts in a cattle raising region. Funding by the local Departmental Government and PIC-COSUDE, it was operated locally by PROINPA Foundation – Chaco office • Located in the low dry lands. • Mixed ethnic background of the population with emphasis on Quechua immigrants and some influence of lowland indigenous groups. • Spanish is the main working language.
Agrobiodiversity management in North Potosí	Previous experiences with the SEP methodology and a clear demand for its implementation in the new project. • Agricultural technology innovation project with few components on development of market linkages • Technology focused on agrobiodiversity of potatoes and other highland crops. Funding by international donors and operated locally by PRODII. • Located in the highlands of North Potosí. • Mixed Quechua and Aymara ethnic background. • Quechua is the main working language.

Source: Personal elaboration

One important characteristic to be highlighted is that both technology innovation projects were operated by local NGOs. The participatory component was introduced by Cambio Andino through a facilitation process that developed local capacity. The actual application of the method was delivered by local NGO staff with continuous support from the Cambio Andino facilitating team.

3.5 Sample size selection

3.5.1 The first sample

The initial sample covered two sets of communities, those where the project intervened and the same number of neighbouring communities free of intervention by the projects but which had similar characteristics. The selection of communities for data collection was conducted through a workshop on each pilot site. In the workshop, staff from each project worked outlining the area intervened by the project. In this area, participating and non-participating

communities were identified. After this initial mapping, the following set of criteria was used to select communities for the sample:

1. Influence of external factors: We sought to minimize the influence of external factors to avoid bias.
2. Proportion of participating families: High proportion of families participating in the project was preferred over low proportions. Communities with smaller proportions of participating families were less frequently visited and serviced by institutions. Selecting communities with high proportion of participating families intended to control for service quality in the community.
3. Size of communities: Larger size communities were selected. This criterion was applied in order to facilitate logistics, ensure sample size and control for ecological conditions. Due to low population many communities aggregate very few families. Selecting smaller communities would mean covering larger geographic areas where replacement of survey units becomes more difficult. Furthermore, vertical landscapes in the highlands generate big ecological differences within short distances. Selecting smaller communities and expanding geographic coverage would also introduce larger ecological variations within each site.
4. Levels of poverty: Communities with different levels of poverty were selected. This criterion was introduced to control for agricultural production. Communities with higher proportion of poor people usually are less involved in agriculture directly, being their main source of income the labour market. Likewise, communities with higher proportion of well-off families are more involved in urban activities and market initiatives, and less in agricultural activities.
5. Similarities between communities: Non-participating communities are selected based on similarities with participating communities. Although similarities are difficult to find in such diverse settings as the high Andes and Chaco region, efforts were made to include some pairing elements such as ecology, productive patterns and market linkages.

Following these criteria 19 communities from 3 indigenous districts in the highlands of North Potosí and 12 communities from 2 municipalities in the Chaco region were selected. In each site, half of the communities were considered participant communities because a variable number of farmers within each community participated in the project. Non-participating communities had no registration of participants in the project and were mainly communities

where the project had no formal intervention planned, although during the initial survey some overlapping was identified.

Given the differences between communities in terms of geographic characteristics, crops and cultural background, and the relatively small size of communities, all families within each community were surveyed. During the first set of data collection a total of 411 surveys were collected from 31 communities in both study sites.

3.5.2 Changes in the research design

During the implementation of the project difficulties emerged that forced changes in the research design. The initial design of data collection considered the difference between participating and non-participating communities, and within participating communities there were participating and non-participating farmers. During the implementation of the projects and for different reasons, non-participating communities were included in the project implementation and thus became participating communities. In the Chaco region a conflict with the provision of equipment caused a considerable reduction in farmer participation. Thus field staff changed their initial system from one of personalized technical assistance to a group assistance approach that increased the participation of farmers who had not been participating initially and that belonged to communities formerly considered non-participant. Likewise, in the highlands of North Potosí non-participating communities demanded to be included and to receive technical assistance from project staff. Some of these demands were expressed during the first round of surveys (See Quote 1) and were immediately attended by the participating NGO in order to avoid social conflict, a very latent situation in the region. Other demands emerged naturally when farmers expressed to the NGO their interest in participating and attended project meetings in neighbouring communities.

> ***Quote 1.*** *In one of the non-participating communities we were asked to return with a project. Farmers were initially very friendly in asking for help but at the end when we could not give a positive response on our returning with a project, they became angry and told us that we would not leave until we promised to return with a project to support them. We had to vow and promise! (Research Assistant, August 2008).*

These changes in the operation of the project produced a simplification of the research design where there were no more participating and non-participating communities, only participating and non-participating farmers.

3.5.3 Reduction in the sample size

During the implementation of the project some changes in operation caused a reduction in the sample size. In North Potosí the region covered by the project comprised 5 indigenous districts, three of which were considered in the initial sample. Nevertheless, during the implementation of the participatory project only field staff from the Qhayanas district remained stable and were able to receive direct support from Cambio Andino team for the implementation of the participatory methodology. Thus the quality of the intervention was only controlled in the Qhayanas district of North Potosí. In the Chaco region two municipalities (Yacuiba and Caraparí) were considered in the initial design, yet during the operation Cambio Andino team was able to provide strong follow up support only in Yacuiba. A change in project implementation introduced by the NGO defined that the communities in the other municipality (Caraparí) would be attended by a different project and new technical staff, although many of the participatory principles also permeated in the region. Furthermore, the presence of gas extraction companies in Caraparí included an additional complication for the analysis of power and empowerment, since power is the principal dimension of inequality that extractive enterprises introduce particularly in the Chaco region of Bolivia (Bebbington et al., 2009).

These changes in project operation along with the conclusion of the Cambio Andino initiative and the decline in funds for field research reduced the sample size to 8 communities, 4 in Qhayanas-North Potosí and 4 in Yacuiba-Chaco. For the analysis of data from the 2008 database, only the 8 communities from Qhayanas and 4 communities from Chaco that were also part of the 2011 survey were considered. This was due to the differences between districts and North Potosí and the Municipalities in Yacuiba. Due to in altitude, crops and production systems vary from one district to another in North Potosí. Additionally the differential distance from every district to urban settlements also determines variation in access to basic services, markets and other development services. In the Chaco region, the essential difference between the municipalities of Yacuiba and Caraparí is the presence of gas fields in Caraparí. These gas fields determine higher availability of public funds derived from taxation of gas production. In parallel the presence of the gas company operational compounds and technical staff influences the local economy, productive patterns and social relations.

Table 3.5 presents a detail of the data collected in 2008 and 2011 from the final sample of communities. It shows a detail of the number of surveys collected in each study site and its

disaggregation according to the self-determined condition of participants and non-participants. In all communities all families were surveyed in 2008. Only the families that had migrated or for some reason refused to be included in the survey did not participate. The 2008 list of families enriched by the new updated community list was the basis for the 2011 survey which also attempted to survey all families in every community

Table 3.5 Detail of surveys collected in Qhayanas and Yacuiba in 2008 and 2011.

Region	Unit	2008			2011		
		Participants	Non-Participants	Total	Participants	Non-Participants	Total
Qhayanas	Frequency	37	30	67	33	27	60
	%	55,2%	44,8%	100,0%	55,0%	45,0%	100,0%
Yacuiba	Frequency	20	19	39	27	27	54
	%	51,3%	48,7%	100,0%	50,0%	50,0%	100,0%
Total	Frequency	57	49	106	60	54	114
	%	53,8%	46,2%	100,0%	52,6%	47,4%	100,0%

Source: Personal elaboration based on survey collection process

There were some differences in the number of families surveyed in 2008 and 2011. In Qhayanas the reduction in number had to do with migration trends where some of the families were no longer permanently residing in the region. The proximity of mines in the neighbouring centres located near Huanuni, Llallagua and Uncia, and the progressive increase in metal prices of tin, zinc, silver and lead with particular emphasis in 2010 (See Figure 3.2 for more detail on metal prices) have increased migration of men and families. Furthermore, 2010 was recorded a dry year with a particularly high occurrence of frost days and high day temperatures (See Table 3.6), factors that affected agricultural production, thus enhancing the likelihood of migration. In Yacuiba, the number of families surveyed increased and although some families from the original list were not available for the survey in 2011, other families that shared plots in the surveyed communities and other communities were present and able to participate in the second round, thus increasing the number of surveys collected in Yacuiba in 2011.

3.6 Tools for data collection and analysis

To study the changes that took place between 2008 and 2011, with and without the use of the participatory method in Qhayanas and Yacuiba, the following four tools for data collection were used.

- A participatory workshop was carried out with local technical staff in each one of the project sites during June 2008. This workshop collected information to typify the area of intervention and determine variables useful for the research design. Additionally, the workshop had the objective of reducing bias in the selection of communities (Chambers, 2008).
- A survey questionnaire was delivered in 2008 and2011 (see Appendix 1), marking the initial stages of the project implementation and after the conclusion of the interventions.
- Participant observation was carried out with variable frequency and depending on activities and events between July 2009 and December 2011. Although there was a year of academic interruption between September 2010 and August 2011, some observation and informal conversations took place in particularly relevant moments of the implementation such as knowledge sharing or evaluation workshops carried out by the Cambio Andino program.
- Informal interviews were conducted mainly with project implementation staff and NGO officials. There was no formal structure to the questionnaires as they emerged in the framework of informal conversations. The main objective was to collect perceptions on project implementation, outcomes and local practices.
- Review of secondary data from national statistics, project reports, SEP evaluation formats and other relevant documents.

3.6.1 The participatory workshop

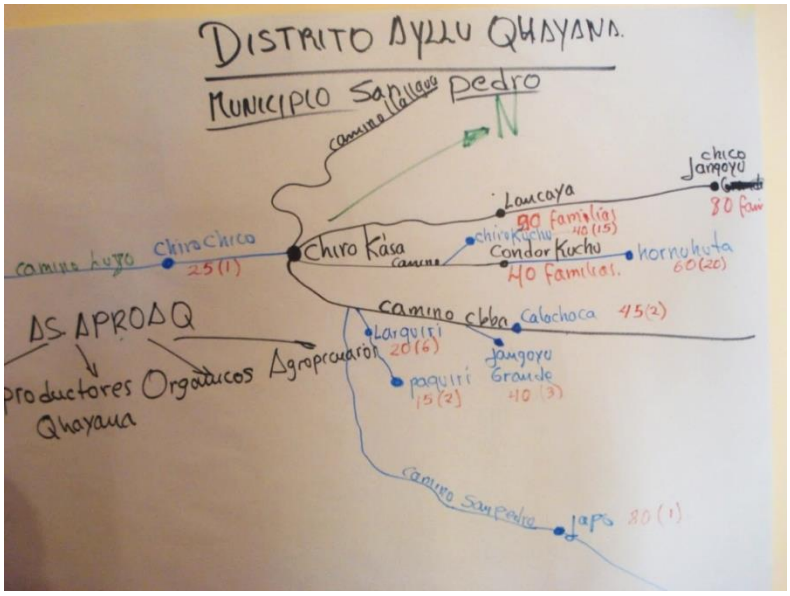
Two participatory workshops were carried out in June 2008, one in the city of Llallagua located in the region of North Potosí, and the second in the city of Yacuiba in the Chaco region. In each region the participants of the workshop were technical staff from the implementing NGO and a specialized Cambio Andino facilitator, in addition to the researcher who managed the workshop. The objective of the workshop was to depict the characteristics of the geographic area covered by the project and identify sources of differentiation, variables and necessary considerations for the research design and data collection process. Appendix 3 presents a detail of the workshop process and results.

During the workshop in North Potosí, "talking maps"[59] (Geilfus, 2002, Botello et al., 2005) (See Picture 1) were drawn and details of each community along with specification of intervention

[59] A graphic representation of the area covered, highlighting landmarks and other traits of interest.

and poverty levels were determined for the five districts participating in the project. Picture 1 shows the talking map of the District[60] of Ayllu Qhayanas. Despite the drawing that showed communities close by, there were great differences between districts and communities themselves. Some communities may be located at high altitudes (Between 3800 and 4600 m.) and may grow only potatoes and raise llamas, while others may be located in the same mountain but at lower altitudes (between 3800 and 2500 m.), on a protected area, or may have access to irrigation water; therefore being able to grow other crops and raise other animals. Although three districts were initially selected for the data collection process, only the Qhayanas district was subject to final evaluation. Other important insights from the workshop had to do with logistic arrangements for the survey piloting and final data collection.

In the Chaco region a similar process took place. Maps of Yacuiba and Caraparí were drawn and a detailed analysis of conditions in each community followed. The analysis enabled an adequate selection of the communities that would be part of the sample. Logistic details for survey piloting and final data collection were also discussed.



Picture 1. Talking map of the Ayllu Qhayanas District

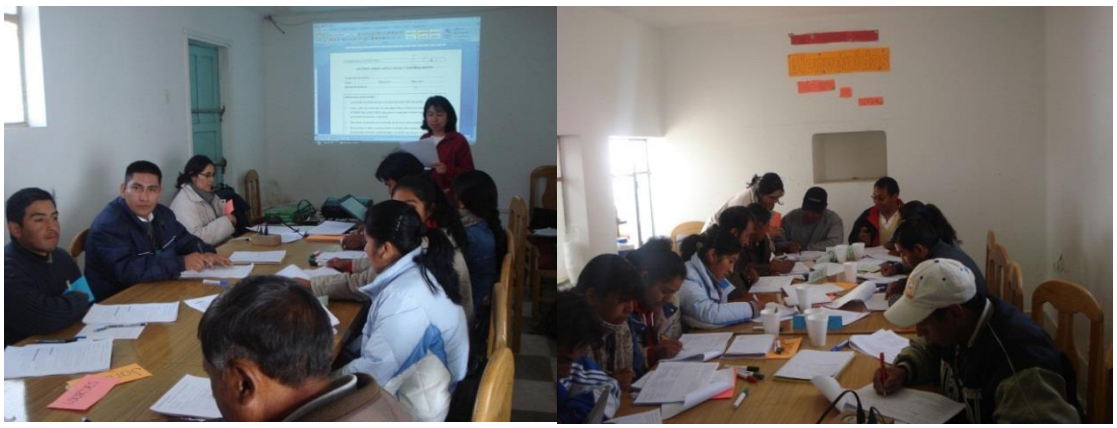
3.6.2 The survey

The survey questionnaire was developed using experiences of other survey questionnaires that addressed social capital, empowerment and participation (Taylor, 2001). The entire survey was intended to collect information at household level, where the targeted respondent was an adult head of the household or another adult with good knowledge of the family, its assets and

[60] A district is an organizational unit similar to a municipal district or section. It is recognized by the current legislation on municipalities.

its involvement in participatory processes. Individual questions were designed to collect information for the present study on empowerment and participation, as well as information required for Cambio Andino's research on social capital and impact.

The survey was tested and adjusted three times. The first testing was conducted in June 2008 with PRODII technical staff (See Picture 2 and Picture 3). The goal was to clarify the objectives of the survey and ensure the questions would be relevant and understandable in the context where it would be applied. Some adjustments to the survey resulted from this first testing. The most relevant change was the reduction in the number of questions formulated to evaluate empowerment. According to local staff, some of whom were farmers themselves, these questions were too elaborate and difficult to understand especially when translated into Quechua, the main local language. The language of many questions was considerably simplified and in some cases categories inside questions were reduced to ensure clear differentiation. The second testing was conducted with farmers using the adjusted survey. As a result from this second testing the survey was further modified to simplify some questions. The third testing was conducted in Yacuiba with PROINPA field staff and farmers (See Picture 4). This last testing had fewer observations that mainly focused on clarifying questions so that the formulation would be understood as was intended.



Picture 2 PRODII staff and local assistants going through the survey questionnaire

Picture 3 Pair discussions to validate and propose modifications to survey (PRODII)

Picture 4 Research assistant Cecilia Figueroa (left) and PROINPA's field technician Daniel Saldaño (right) during the third testing of the survey in Yacuiba (July 2008)

3.6.2.1 Survey training

For the first round of surveys in 2008, the process of survey validation and adjustment was embedded in the training of local assistants. Orientation to NGO field staff and intensive training to local assistants was conducted for one day in North Potosí. During this first day of training the initial piloting took place. After the necessary adjustments to the survey were made, a second day of training took place through piloting the survey with farmers who were related to the NGO and were visiting the City of Llallagua in North Potosí. In Yacuiba there was a similar process. The first day was of intensive training to local assistants and PROINPA's field staff, and the second day comprised a piloting phase with farmers from the outskirts of the city of Yacuiba.

During the second round of surveys in 2011 there were two days of training to local assistants. During the first day both local assistants and NGO field staff received orientation and intensive training. On the second day local assistants practised the application of the survey amongst themselves, with NGO field staff and with farmers that were visiting the local NGO.

3.6.2.2 Survey team formation

Two teams, one for Yacuiba and one for North Potosí were formed to collect information for the first survey round in 2008. Each team consisted of the main researcher, a research assistant and 9 – 10 local assistants, and a local guide. For the second round of surveys in 2011 once again two teams were formed one for each region. The essential difference was the number of local assistants was reduced to 4. This was due to the reduction in sample size in terms of number of surveys collected and number of communities that were part of the sample.

Local assistants were selected based on the characteristics of every region. In North Potosí, all members of the local assistants' team were fluent in both Spanish and Quechua and had good knowledge of agricultural practices in the region. Most members of the team had previously participated in local agricultural surveys for different institutions. In Yacuiba the local assistant's team was from a mixed background, similar to that of farmers themselves, and spoke Spanish with the local accent and linguistic adaptations. Most members of the team in Yacuiba had participated in survey processes for the regional government.

3.6.2.3 Field operation and supervision

In North Potosí, the survey was conducted in Quechua and question formulation was standardized. The survey was however written in Spanish because, although farmers and local staff speak Quechua and sometimes Aymara, they do not read or write in these languages. In Yacuiba the survey was conducted in Spanish. The questionnaire delivered in 2011 was exactly the same as the one supplied in 2008.

Field spot checks were performed by the main researcher in both regions on a sample of completed questionnaires. In parallel the main researcher provided support to survey team members on the selection of new respondents where previous respondents were not available (See section 3.5.3 for more detail on selection of new respondents and changes in sample size).

3.6.3 Participant observation and informal interviews

During the operation of the project Yacuiba and North Potosí were visited at variable intervals and depending on the activities to be delivered in the region. Insights from the visits and short informal interviews with decision makers, local technical staff and farmers were registered. Interviewed farmers were representatives from their communities who had been nominated by the communities to participate in events of systematization of experiences organized by Cambio Andino. Insights provided by farmers were used to clarify and enhance results from survey data.

3.6.4 Sources of secondary data

The main sources of information reviewed were internal project documents and Cambio Andino implementation and impact evaluation documents. These documents included workshop proceedings, SEP evaluation formats, activity reports, project progress reports and other similar material. Other sources of secondary data were local and national sources such as statistical information from the National Statistics Institute and the Municipal Development Plans.

3.6.5 Data processing and editing

Data checking was conducted at different stages of the study. The research assistant performed the first editing through revisions of all survey questionnaires in the field, to ensure proper completion and request clarification in case needed. The main researcher and the

research assistant would cross-check surveys from different team members every night to ensure consistency of information.

Data from surveys was entered directly into SPSS. A second phase of checking took place where averages and distribution of different questions were observed in order to spot tabulation mistakes. Statistical analysis was carried out using SPSS to depict the behaviour of different groups with regard to the variables considered for the study.

3.7 Study Sites: context, project and trends

The research was conducted in two study sites (See Section 3.4) Qhayanas in North Potosí and Yacuiba in the Chaco region of Bolivia (See Figure 4.1 for specific location of sites in the country). The cultural and historic differences of the two sites will be presented in Chapter 4, Sections 4.2 and 4.4. The following sections will describe the study sites and their current situation, including some major trends in terms of agriculture, climate, and other factors that affect local economy and migration. Additionally there will be a description of the project framework where the participatory method was implemented in each study site.

3.7.1 North Potosí and Qhayanas context and trends

The North Potosí region is one of the poorest and most vulnerable regions of Bolivia (Mosse, 2004). Ayllu Qhayanas is located in the Municipality of San Pedro de Buena Vista, Province Charcas of Potosí (Bebbington et al., 2007). Economic activity in the Qhayanas district is governed by agriculture and complemented by seasonal migration.

Agricultural production is highly constrained by the harsh climatic conditions existent. The average annual temperature is 8°C with an average rainfall of 350-400mm (Mosse, 2007). Climatic data show that 2010 was a very dry year with higher temperatures yet high frequency in days with frost (See Table 3.6), thus influencing data collected during the first months of 2011.

Table 3.6 Average climatic conditions in Potosí (Puna) during the last 10 years

Variable	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011p
Rainfall (mm)	308	332	277	392	329	397	258	485	266	445
Average Temp. (°C)	6,23	5,20	8,13	8,13	8,42	8,91	8,05	8,33	9,20	8,23
Average Max Temp. (°C)	16,73	16,63	16,58	16,37	16,90	17,08	17,04	16,89	18,09	16,75
Average Low Temp. (°C)	-4,33	-6,14	-0,43	-0,04	-0,07	0,58	-0,93	-0,23	0,29	-0,28
Days with frost / year	189	261	296	300	136	160	139	131	169	150*

* Source: SENAMI & INE 2012. Estadisticas del Medio Ambiente. *Decade.* La Paz: Instituto Nacional de Estadística - Bolivia.
(p) Preliminary and projected data

In Qhayanas the main cultivated crop is potato and one family may cultivate anywhere from 30 to 100 varieties of potatoes. Due to the extremely harsh climatic conditions and the high slope terrain, plots of land are usually cultivated on 5 to 10 year cycles, where the first year is potato, the second and third barley and oats followed by a fallow period of variable length. Agriculture is almost entirely dependent on rainfall and although some farmers report having irrigation, the size of the irrigated plots is usually very small (no more than 1000 m^2). Some communities in Qhayanas are located at very high altitude (approx. 4600 m.) where they raise sheep and llamas, and cultivate potatoes. Other communities are located at lower altitudes and have irrigation, thus being able to produce other crops (See Section 4.2.1 and Table 4.2).

Agricultural production rarely produces a marketable surplus. Some products are sold or bartered in local markets in order to diversify the potato-based diet. Most families are large but there are high infant mortality rates (Scoones et al., 1994), thus the access by adults to food is prioritized.

Quote 2. *There was a meeting to socialize the participatory method. People brought their potatoes, some onions and tomato, and the project team bought a lamb to cook. After the meeting food was served first to the guests (project staff), then to men, later to women. Children were just waiting and when it was their turn they received only a few potatoes, for there was no meat for them. When I asked one of the project staff about it he mentioned that men need to eat more because they work for the family. "If the man is not strong, falls ill or dies then who would work the land?" He asked. (Field notes) (Project staff was male of approximately 35 years old of local origin)*

Due to the difficult agricultural conditions that reduce food availability for families, many men and young people migrate (Bebbington et al., 2007) seasonally or permanently.

> ***Quote 3.*** *It is a difficult life we have as farmers. We produce only to eat and when the year is dry or there is frost and hail men have to go out to work. It is usually the young who decide to leave the community, and go work in the mines. We want our young to stay in the community but this (showing his potato plot) is not enough! (Field notes) (Male farmer above 60 years old)*

Information from the census shows that population growth in the Department of Potosí is affected by migration. Some migration is thought to be internal, to other Departments, while there is also migration to other countries (CODEPO, 2004) mainly Argentina. Table 3.7 shows a detail of the internal migration rates in the departments of Potosí and Tarija during the 1991 and 2001 census. Potosí is the region with the highest outmigration rate in the country (CODEPO, 2004), and young people particularly in rural areas perceive migration outside their communities to be the only alternative to improve the quality of their lives and the lives of their family members (Rahnema, 1990).

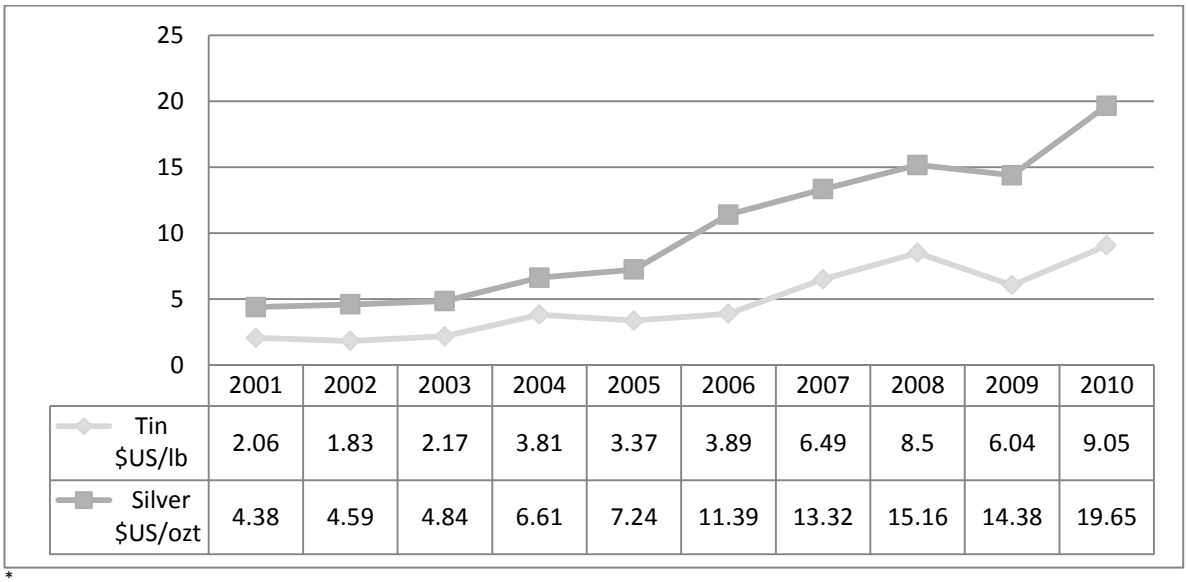
Table 3.7 Internal migration rates in Potosí and Tarija

Region	1991 Census		2001 Census	
	Total Population	(%)Internal Migration Rate	Total Population	(%)Internal Migration Rate
Total Bolivia	6,327,161		8,149,783	
Potosí	643,140	-29,50	706,402	-37,59
Tarija	283,799	8.46	375,626	12.58

Source: INSTITUTO NACIONAL DE ESTADÍSTICA 2005. *Atlas estadístico de municipios 2005,* La Paz, INE.

The mining sector is the most important economic activity in the Department of Potosí, and Ayllu Qhayanas is located near the mining towns of Uncia, Llallagua and Huanuni where mines produce tin and silver, among other metals. Although during the 1990s tin and silver prices were relatively stable, since 2004 prices had begun to rise. In 2010 tin and silver prices reached their highest level in over 20 years, thus creating incentives for farmers from Qhayanas to leave their communities and join mining activities. Figure 3.2 shows prices of tin and silver during the last 10 years, where an evident increase can be observed in 2010. This migration was observed in the surveying process of 2011 where some families from the North Potosí–Qhayanas case who initially participated in 2008 were reported absent or not able to respond to the questionnaire.

Figure 3.2 **Prices of the most common metals extracted in the mines near the Qhayanas District during the last 10 years**



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Tin $US/lb	2.06	1.83	2.17	3.81	3.37	3.89	6.49	8.5	6.04	9.05
Silver $US/ozt	4.38	4.59	4.84	6.61	7.24	11.39	13.32	15.16	14.38	19.65

*

* Source: INSTITUTO NACIONAL DE ESTADÍSTICA 2013. Estadísticas económicas, minería. *In:* INE (ed.). La Paz: INE.

3.7.2 North Potosí and Qhayanas – the innovation project

Given the harsh environmental conditions and high poverty levels in the North Potosí Region, agriculture and technology innovation is focused on supporting the productivity of local crops, risk reduction and the improvement and conservation of natural resources. The most important crop produced by farmers is potato, with hundreds of different native varieties produced every year. Although production systems are based on potatoes, there are other crops that can be produced depending on the altitude of every community. These crops can be barley, oats, broad beans, other roots and tubers, quinoa, lupine and some native herbs.

The innovation project delivered in this area was called “Recovery, Management and Sustainable Use of Agrobiodiversity Resources in North Potosi” operated locally by the Integral and Interdisciplinary Development Program (PRODII), and financed by the Unitarian Service Committee of Canada (USC Canada). The project worked on identifying and systematizing productive biodiversity to identify factors affecting its loss and to promote their conservation. It also supported knowledge-sharing spaces regarding the use of agricultural biodiversity with influential actors in the region, and developed the capacities of men and woman to manage and conserve natural resources to improve productivity and market linkages (PRODII, 2008). The emphasis on biodiversity essentially is a reflection of the wide agricultural biodiversity of

Andean crops produced in the region; that are basically the only crops that can be produced due to the harsh environmental conditions. There are hundreds of varieties of potatoes for different purposes, and which are only known locally thus having no or unknown market value.

The project was implemented by PRODII, a local NGO with almost 10 years of experience in promoting local development in North Potosi. Most of the staff, from the general manager to the local technical staff, are locals and in some cases belong to the communities where they are delivering development initiatives. This characteristic has created a culture of commitment with efficiency within PRODII. The institutional experience with participatory methods began in 2003 through interactions between PRODII, PROINPA and the International Centre for Tropical Agriculture (CIAT) (Polar et al., 2011b). Since then, most of the projects delivered by PRODII incorporate elements of participatory research and development. Furthermore, most of PRODII's projects were funded by international donors.

Agricultural production by small farmers in North Potosi is based on potatoes and the family workforce. The pressure of production in the difficult environmental conditions has increased soil degradation with consequences on productivity. The project on sustainable management and use of agrobiodiversity, delivered technical assistance to enhance soil conservation practices and improved agricultural practices for potato production. It also supported market linkages for a large array of potato varieties and other local products (PRODII, 2008).

The project delivered by PRODII was successfully evaluated by the donor, local authorities and local farmers. Although the production of agricultural surplus for market development was modestly achieved, the increase in yield and the diversification of production contributed to food security and to reduce vulnerability in the area (Jarro, 2010). It was in the framework of this technology innovation program that the intervention with a specific PM&E method took place. The intervention with this method is regarded as the "intervention" and whose outcomes in terms of empowerment are the axis of this research. Section 3.8 of this chapter will elaborate on the nature of the specific PM&E method and its objectives.

3.7.3 Chaco and Yacuiba context and trends

The Chaco region located in the departments of Tarija and Santa Cruz has received growing support for development from the central government. This was due to national development

plans (See Section 4.1.2.3, and 1.3.1) and several development projects[*] that highlighted its strategic importance for agricultural production, but also due to the extensive gas fields found in the region. Part of the taxes from gas extraction is received by the Departmental Government and the local municipal governments, thus some municipalities (those housing the gas fields) have more financial resources.

Agricultural production in Yacuiba is concentrated on staple products such as maize, groundnuts, sorghum and cattle production. The average year temperature is 21°C, with low likelihood of frost during the winter, thus enabling year-round production. The dryness of the climate is a restriction to agricultural production and although there are big underground water reservoirs (Chambers, 1994), small and medium scale producers have no access to irrigation. Climatic data show that 2010 was a dry year with high temperatures (See Table 3.8) thus affecting production and influencing data collected at the beginning of 2011.

Table 3.8 Average climatic conditions in Yacuiba (Chaco) during the last 10 years

Variable	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011p
Rainfall (mm)	817,00	1.228,00	987,00	1.275,00	1.611,00	1.092,00	916,00	1.048,00	927,00	1.137,00
Average Temp. (°C)	21,93	21,66	21,16	20,75	21,28	20,85	21,09	21,51	21,13	21,50
Average Max Temp. (°C)	28,25	28,40	27,25	26,68	27,30	27,38	27,75	28,59	27,87	27,99
Average Low Temp. (°C)	15,61	14,88	15,01	14,74	16,05	14,28	14,43	14,43	14,40	14,98
Days with frost / year	N/A	N/A	N/A	3	0	6	2	3	6	7[†]

* Source: (SENAMI and INE, 2012)
(p) Preliminary and projected data
(N/A) Data not available

[*] Examples of these development projects are: the vegetable oil Factory in Villamontes established in 1974 and the irrigation project of the Pilcomayo river banks from 1989-1993. The perspectives of irrigation and market contributed by these projects had a positive influence on settlements. BAZOBERRY CHALI, O. 2003. 50 años de la Reforma Agraria en el Chaco Boliviano. *In:* VARGAS VEGA, J. D. (ed.) *Proceso Agrario en Bolivia.* La Paz: Plural Editores.

Information from the 1991 and 2001 census shows that population growth in the Department of Tarija is affected by immigration. The Chaco region in particular receives internal migrants

from other departments and external migrants from other countries (CODEPO, 2004). Nevertheless, inside rural communities there are also processes of migration of young people to urban areas (Rahnema, 1990). Table 3.7 shows a detail of the internal migration rates in the Departments of Potosí and Tarija during the 1991 and 2001 census. This information reflects a flow of migrants to the Chaco region of Tarija, from other regions of Bolivia. Furthermore, within Tarija, the municipality of Yacuiba has the highest rates of population growth and migrants come from the Departments of Chuquisaca, Potosí, La Paz and Cochabamba (Mohan and Stokke, 2000).

The description of the project sites presented above is a general overview of the current situation, yet a deeper analysis of each site is required to fully understand the outcomes of the implementation of the participatory method in terms of empowerment. The next chapter will elaborate on history and culture providing elements for the analysis of how culture and history affect the outcomes of participatory processes on empowerment (See Section 3.3.6).

3.7.4 Chaco and Yacuiba – the innovation project

The environmental conditions enable the production of staple crops and cattle raising in the Chaco region. The municipality of Yacuiba is particularly benign in terms of rainfall, in comparison to the rest of Chaco, therefore agriculture and technology innovation is concentrated on the development of staple food crops and market linkages for farmers.

The innovation project delivered in this area was the Program of Maize and Groundnuts (PROMyM) [66]. The program comprised two different yet complementary components. One focused strongly on crop management, technology for intensive agricultural production and market linkages. This first component, the central objective of the initiative, was financed by the Departmental Government of Tarija (Fernandez et al., 2011a) and operated by PROINPA Foundation. The second component was fostered througha process of continuous innovation by strengthening a network of actors from the value chains of maize and groundnuts. This strengthening of the actor network was once again operated by PPROINPA Foundation and financed by the Continuous Innovation Program (PIC) of COSUDE. Actors involved included farmer associations, individual farmers, research institutions, public institutions and market organizations. The core of the funding came to the technology innovation component through the Departmental Government and included funds for research into new varieties, technical assistance and provision of equipment for farmers of small and medium size land holdings.

[66] Programa de Maíz y Maní

The funds provided by COSUDE were much more limited and focused on knowledge management, considering PROMyM as a case study for the development of a technology innovation model that promoted continuous innovation.

PROMyM was implemented by PROINPA Foundation, an NGO with over 20 years of experience in research and development within the agricultural sector. Furthermore, the implementing institution had wide experience in the delivery of technology innovation projects through the use of participatory methods. Although part of the PROMyM program was financed by the public sector, most of PROINPA's experience was based on the delivery of projects funded by international donors (Gandarillas M., 2011).

The production of maize and groundnuts by small and medium scale farmers in the Chaco region is based on family workforce with traditional inputs and limited sources of funding. The main problems are the attack of pests and diseases, drought and lack of access to labour during harvest which affects the quality of the product. The PROMyM program delivered research on new varieties and technical assistance on the use of high quality seeds, appropriate technology for pests, diseases and weed control, crop management techniques, the use of equipment for harvest and post-harvest processes, and the development of market linkages (Maita, 2010).

The PROMyM program went through some funding difficulties that interrupted its implementation. The Departmental Government of Tarija had committed funding for machinery and equipment[67] for harvest and post-harvest during 2008. The disbursement of those funds was delayed for about 18 months. This delay was worsened by the increase in equipment prices. The Departmental Government provided equipment with different specifications, and after a long struggle only half of the promised equipment was delivered but at least with the correct specifications (Fernandez et al., 2011a).

It was in the framework of this technology innovation program that the intervention with a specific PM&E took place. It is the implementation of this method that will be regarded as the "intervention" and whose outcomes in terms of empowerment are the axis of this research. The next section will elaborate on the nature of the specific PM&E method and its objectives.

[67] Machinery and equipment for groundnuts were diggers, crushers, dryers, classifiers, peelers, toasters, mills, sealers, scales and net silos. Equipment for maize were 40qq silos, crushers, bag sewers, sealers, scales, fractioning scales, peelers, mixers and grain cleaners.

3.8 The participatory method and its implementation

Participatory Monitoring and Evaluation (PM&E) is a generic term used to describe a process that involves stakeholders and particularly local people in the evaluation of interventions (See Section 2.4.3). There are different PM&E methods and frameworks that vary according to the level of involvement of stakeholders and ultimate beneficiaries in the process, ranging from mere nominal "participation" or attendance with the objective of providing information, up to full involvement in the execution of the evaluation and over decision making with regards to the results of the process (See Section 2.4.4). The participatory methodology implemented in the study sites is known as SEP, the Spanish abbreviation for Participatory Monitoring and Evaluation. Throughout the research the SEP abbreviation will be used to distinguish the particular features of the method with those of the wide range of PM&E methods and frameworks used in the development sector.

The SEP methodology implemented in the two projects was initially developed by the International Center for Tropical Agriculture (CIAT) in Colombia and Honduras, tested in Africa and Latin America (Eyburn and Ladbury, 1995, Bloom and Keil, 2001), and adapted by CIAT and PROINPA Foundation for its application in Bolivia and the Andean region (Lewis, 2011).

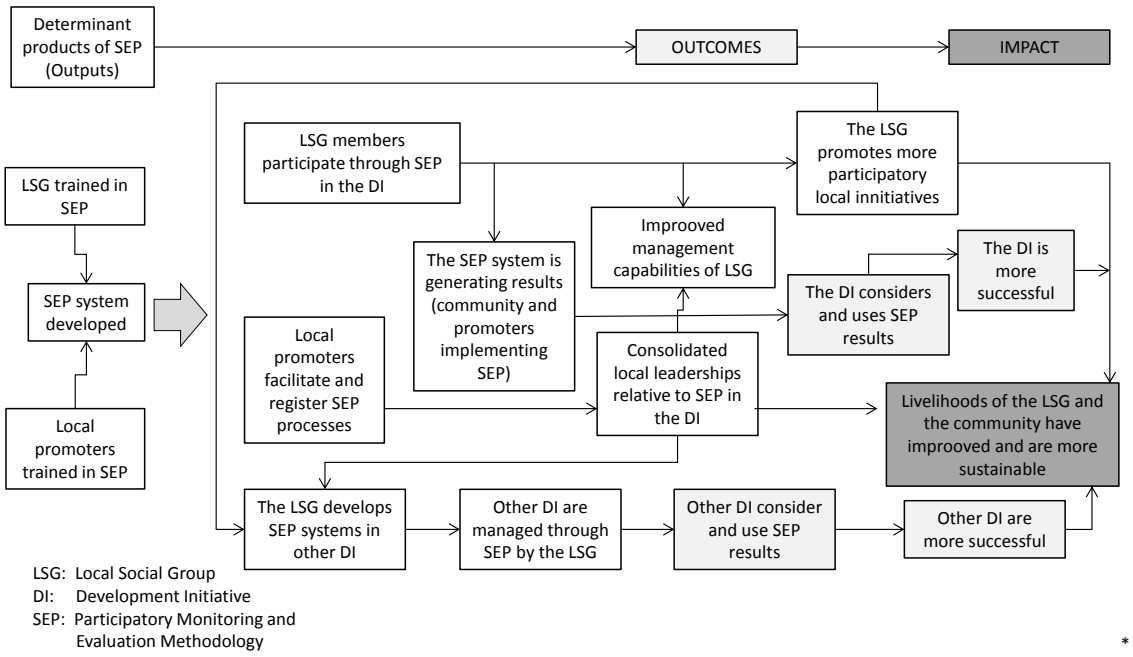
The purpose of the SEP methodology is to strengthen farmer groups or organizations by providing them with tools to identify their development objectives, plan activities, monitor, evaluate and, be part of the adjustment and decision making in projects or initiatives developed in their communities. It is designed to fit the needs of rural people with low or diverse literacy levels, promoting a process of iterative reflection and action and the registration of information.

A logic model for was developed by the implementers of the SEP methodology. This model was based in the "Participatory Impact Pathway Analysis" methodology[68], developed by researchers from CIAT as a project management approach (Douthwaite et al., 2007, Alvarez et al., 2010). According to this logic model, the implementation of SEP was intended to achieve some specific outputs, outcomes and impacts. The immediate outputs of the method were related to capacity building of local social groups and local promoters to manage the SEP methodology, and the establishment of a local SEP system to monitor and evaluate interventions based on local indicators and objectives. The expected outcomes reflected the

[68] This methodology holds some similarities with the "Theory of Change". The essential difference is the use of a series of participatory tools to develop a path of change with the actors involved in the process.

operation and results generated by the implementation of the SEP system. It was expected that the operation of the SEP system would strengthen the capabilities of local social groups to manage and lead development initiatives. Eventually it was expected that the development initiative would consider results of the monitoring system to enhance its operation and that the SEP methodology would be used in other development initiatives to enhance results. Ultimately the impact of the SEP was to support success of the development intervention, and the enhancement of livelihoods. Figure 3.3 shows the impact pathway logic model for the SEP methodology as conceived by the implementers.

Figure 3.3 SEP Logic model developed by the implementers



*

* Translated from FERNANDEZ, J., POLAR, V., QUIROS, C. A. & ASHBY, J. 2011b. Descripción del método SEP. *In:* THIELE, G., QUIROS, C. A., ASHBY, J., HAREAU, G., ROTONDO, E., LOPEZ, G., PAZ YBARNEGARAY, R., OROS, R., ARÉVALO, D. & BENTLEY, J. W. (eds.) *Métodos participativos para la inclusión de los pequeños productores rurales en la innovación agropecuaria: Experiencias y alcances en la región andina 2007-2010.* Lima: Programa Alianza Cambio Andino.

3.8.1 Requirements for the implementation of SEP

The SEP methodology is flexible enough to be implemented with consolidated farmer organizations as well as with newly formed or occasional groups. Its implementation requires a skilful facilitator who will build local capacity and accompany one cycle of evaluation. Capacity building is carried out in a one week workshop that enables the coaching of local facilitators and the beginning of the implementation. After the initial application at least two

bimonthly visits of the main facilitator are needed to support the local field facilitators and to reinforce the skills of farmers that assume specific roles in the process.

The target group for SEP implementation is a group of farmers that share common interests and/or have a common goal. It requires the formation of a SEP committee or team of volunteers who are prepared to take over the SEP process from the local facilitator after the first cycle of implementation. The first cycle of implementation involves the evaluation of the job and performance of the project and staff represented by the local facilitator and the NGO providing the service. Farmer evaluation feedback is given to the local facilitator and joint agreements are developed. If a dispute arises feedback is given to the NGO supervisor who sought to produce consensual agreements.

3.8.2 Step by step through the implementation

After an initial capacity building of local facilitators, the implementation process included the following steps.

Table 3.9 Steps in the SPE Methodology

Step		Description and objective
1	Understand local context	Facilitators gather information on local context to identify local monitoring and evaluation practices. This helps facilitators choose the approach used in order to avoid conflict with local customs and to promote integration with the local frameworks.
2	Definition of key terms	Local people and facilitators develop a joint understanding of key terms such as evaluation, monitoring, indicators and others. The objective is to create common understanding and avoid complications created by language and cultural differences.
3	Definition of shared goal	Identify the common goal and objectives of the group. This aids in the visualization of the contribution by different initiatives and/or projects and helps farmers focus on mid and long term objectives.
4	Identification of indicators and results	Visualizing their common goal farmers identify simple and practical indicators or milestones to be assessed, and define responsibilities and time frames. This introduces the basis for monitoring and evaluation.
5	Identification of activities	With objectives and milestones in mind farmers identify activities that will aid them in their accomplishment, responsibilities and time frames.
6	Elaboration of formats	Depending on the proposed activities, on the schooling level and on other contextual variables evaluation formats are developed to evaluate each activity and milestones. Usually it uses a diagram format where people vote to reflect on the sense produced by the activity and its outcome.
7	Formation of SEP committee	Once the previous steps have been covered collectively by the entire group or community, a SEP committee is formed in order to assume responsibility for championing the process with the whole group or community. These committee members are responsible for facilitating the reflective process collecting data and presenting results to the group.
8	Use of SEP results	Results from the evaluation are collectively analysed and used to negotiate adjustments to the project or initiative that will enhance results.

Source: Adapted from POLAR, V., FERNÁNDEZ, J., ASHBY, J., QUIROS, C. A. & ROA, J. I. 2011a. Participatory methods and the co-production of agricultural advisory services. Results from four case studies in Bolivia and Colombia. *Social and Health Sciences Working Paper,* 2011**,** 107.

3.9 SEP guiding principles and quality control

The essential principles that guided the SEP implementation were (Polar, 2012):

- Beneficiaries should be involved in every step of the implementation process
- The process should be adapted to local existing systems, language and knowledge
- Evaluation is formative and not punitive, it seeks to provide guidance and corrective feedback

- Feedback is given immediately after events and seeks consensus
- Promotes the systematic registration of information

There was no formal evaluation of the implementation of the method in each site yet Cambio Andino project staff from two different groups were operating and supervising the implementation process. One group was in charge of implementation and direct field interaction with local facilitators and operating NGOs, while the other group was in charge of collecting data for further evaluation.

During an internal reflection process carried out between Cambio Andino staff and staff from the implementing NGOs, facilitators were asked to identify difficulties, adjustments or modifications to the method. According to facilitators there were no changes in the protocol of implementation yet there were adjustments in individual tools in order to fit them to the local context. For example, cattle and maize stories, and drawings were used to introduce concepts of participation, monitoring and evaluation in Yacuiba; while potato examples were used in Qhayanas (See I). In Yacuiba the main language for both the capacity building of local facilitators and the field application with communities was Spanish. In Qhayanas the capacity building of local facilitators was carried out in Spanish, yet the application in the field was delivered in Quechua. Although language poses a challenge in terms of the adequate translation, the main Cambio Andino facilitator spoke Spanish and Quechua, and was able to follow up field activities in order to promote acceptable interpretation. Furthermore, the definition of key terms (Step2) aided the construction of a shared understanding of the process. Finally, in both cases specific emphasis was given to clarify the project objectives and their contribution to the specific objectives of the organization (Sept 3), and to the activities delivered by the project (Step 5).

3.10 Ethical considerations

This study followed the principles of ethical research outlined in SOAS's Research Ethics Policy (SOAS, 2009). Following SOAS's commitment to ethical standards, some specific ethical issues were explicitly addressed in order to protect individual rights and privacy, throughout the implementation of this research. Additional considerations were assumed to address the background of the researcher during data collection. A detail of specific ethical considerations assumed by the study is presented below:

I. INTEGRITY

- Findings from the study were integrated in the Cambio Andino research data sets.
- Physical surveys will be kept for up to 5 years after the conclusion of the research by PROINPA Foundation.

II. HONESTY

- Contributions of partner institutions and other Cambio Andino researchers in this research were clearly outlined throughout the methods chapter of this research.

III. OPENNESS

- Research assistants and numerators were specifically informed of work context situations, difficult field conditions and risks of interaction with farmers from participating and non-participating communities.
- Partner institutions were informed of the research process and its implications and were aware of the possibilities of conflict emerging from the implementation of the participatory method and/or data collection.
- At the beginning of every survey questionnaire delivered farmers were informed about the purpose, methods and intended possible use of the data provided.

IV. CONFIDENTIALITY

- Being power a sensitive issue, confidentiality of information provided by research participants and their anonymity is respected throughout the research. Quotes from farmers are referred to through general characteristics.

V. VOLUNTARY PARTICIPATION

- The first section of the survey seeks voluntary consent from respondent before delivering the survey.

VI. AVOIDANCE OF HARM

- In order to incorporate non-participating communities as a variable in the research design, partner institutions agreed to facilitate logistic access to communities not attended by the project. When demands from non-participating communities emerged during the first round of surveys, Cambio Andino and partner institutions modified the intervention to comply with the demands and avoid conflict.

VII. INDEPENDENCE AND IMPARTIALITY

Given the background of the researcher as practitioner of development and agricultural research in Bolivia, and her role as Cambio Andino's coordinator of the participatory component in Bolivia, the following considerations were taken in order to avoid bias:

- The implementation of the participatory method in both study sites was delivered by two SEP facilitators without the direct involvement of the researcher.
- The researcher was not directly involved in the follow up activities to strengthen the capacity of new local SEP facilitators in neither study site.
- The researcher was not directly involved in the follow up activities where Cambio Andino staff and the new local SEP facilitators worked with farmers on monitoring and evaluating the project.

VIII. CULTURAL SENSITIVITY

- Due to the sensitivity of power issues, the main researcher worked closely with field staff during data collection. This was done to avoid the inter-cultural barrier between subjects and the researcher who had a different ethnic background and didn't speak Aymara or Quechua fluently, and was perceived as an urban outsider. It was also the case in Yacuiba where, although ethnic differences were not perceived due to the mixed background of the population, the language accent in Spanish and the difficulties to communicate in other languages produced the perception of urban outsider.
- Special attention was paid to local values and culture during participant observation and informal interviews.

Based on the methodological considerations presented in this chapter, the study was conducted in two contrasting sites. Although some elements describing study sites are presented throughout this chapter, a more detailed description of variables of history and culture will be presented in next chapter.

3.11 Scope and limitations of the study

This study is essentially about the perception of empowerment and empowerment variables according to the experience of farmers during and after the implementation of a participatory process. Perceptions are essentially subjective measures and depend entirely on the emotions, feelings and experiences of families to the questions asked. The study attempts precisely at reflecting objectively on these subjective measures, by measuring the extent to which the social group perceives itself to be more or less empowered after an intervention. Furthermore, the study seeks to depict the complex interaction of factors that contribute to the formation of empowerment as a perception of the social group.

Although considerable effort was invested in ensuring the validity and reliability of the research, some contextual and operational situations impacted the study throughout the implementation process. The following paragraphs will present the limitations faced throughout the process in terms of reliability and validity.

3.11.1 Issues of reliability

This study focuses on evaluating empowerment mainly through the application of survey questionnaires on a series of communities, before and after the implementation of a participatory project on technology innovation for the agricultural sector. Nevertheless, due to project timing, the first survey was not applied before but during the first stages of the project implementation. Additionally, the initial design considered participating and non-participating communities as well as participating and non-participating farmers. Changes in project implementation and social dynamics eventually produced overlapping categories between participating and non-participating farmers, and a reduction in the number of communities evaluated (See Sections 3.5.2 and 3.5.3).

The first survey was conducted in the winter of 2008, at the end of July in North Potosí and at the beginning of August in Yacuiba. There is some seasonal migration during this period of the year but road access is better in both regions at this time of the dry season. The survey was conducted as soon as the study was approved by Cambio Andino to enable data collection in early stages of project implementation.

The second survey was applied in January 2011 although it was programed for July 2011. This change in schedule was a result of the termination of agreements between Cambio Andino and the NGOs operating locally in December 2010. These agreements were meant to continue in the second phase of Cambio Andino but due to changes in DfID funding policy[71] the second phase of Cambio Andino was not approved and all research processes had to be concluded. To enable the second phase to be completed, the study was brought forward to January 2011 and data collection was included in the budget of the first phase. The difference in the timing of the first (July) and the last survey (January) can be responsible for a certain degree of what is called by Chambers “the dry season bias”. Yet the extent of influence of this type of bias in this particular case is not clearly observed since final results show that the situation of the first survey during the dry season is better than the situation reported during the final survey collected in the rainy season.

[71] Project funding in Latin America ceased and aid was focused on other regions of the world.

3.11.2 Issues of validity

A mixed-method approach was considered to address the fundamental attribution bias, by incorporating situational factors in the analysis (See section3.3.2), yet other types of bias were more difficult to address directly. There is no neutral or uninvolved knowledge (Mosse, 2006) and in this particular case there was no sharp divide between the researcher and the intervention. The condition of the researcher as part of the Cambio Andino initiative and leader of the participatory methodologies team was a factor, sought to be addressed through ethical considerations (See section 3.10) but that nevertheless needs to be considered when evaluating the validity of the research in terms of actor-observer bias[72] and self-serving bias[73].

3.11.3 Self-awareness of the researcher

In this study, the researcher is not an external actor but a participant in the process. This situation was partially addressed through a series of ethical considerations oriented towards reducing the influence of the researcher's role as member of the team responsible for facilitating the implementation of the participatory methodology (See section 3.10), and through explicit awareness of possible biases (See section 3.11.2). Yet there are other implications that emerge from this active role of the researcher and which will be shortly addressed in this section.

Self-awareness is the capacity to become the object of one's attention, identifying processes and recoding information about the self in terms of mental states and public aspects (Morin, 2004). Based on this definition of self-awareness the researcher has identified and recorded the following situations during the research that influenced her mental states and behaviour.

Organizational culture in the definition of the research approach. In the choice of epistemological approach the researcher was strongly influenced by the organizational culture of international research centres, namely CIAT and CIP. Social scientists in these institutions are strongly influenced by the emphasis on natural sciences and are continuously pressured by their boards to demonstrate impacts in terms of numbers. Although there was no specific request by the research centres, or mention of the approach that should guide the research,

[72] The actor-observer bias states that we tend to under-value dispositional explanations and over-value situational explanations of our own behaviour. WILSON, S. R., LEVINE, K. J., CRUZ, M. G. & RAO, N. 1997. Attribution Complexity and Actor-Observer Bias. *Journal of Social Behavior and Personality,* 12**,** 709-726.
[73] The self-serving bias is thought of as a means of self-esteem maintenance where individuals are motivated to make internal attributions for positive outcomes and external attributions for negative outcomes. COLEMAN, M. D. 2011. Emotion and the Self-Serving Bias. *Current Psychology,* 30**,** 345-354.

the idea of an objectivist approach was accepted as a natural and almost obvious choice. This process is congruent with Mosse's ethnographic analysis of professional communities, where he expresses his concern for epistemic capture and the possibility for co-option (Mosse, 2006). Similarly, when analysed within the power–empowerment framework developed for this thesis (See section 2.2), the choice of epistemic approach can be understood as a form of power over, showing the latent dimension of power (Lukes, 2005), where the researcher seeks to voluntarily comply with the funding body. On the other hand, it would be over-simplistic to believe that the decisions made by the researcher in terms of epistemological approach were only a result of external factors such as the organizational cultures of the research centres. The choice of approach was also related to the initial background of the researcher as an agricultural scientist and her lack of language skills to undertake a more ethnographic approach with Quechua, Aymara and Guaraní speaking families. Overall the choice of epistemic approach was a combination of external and internal factors as a combination of powers emerging from different sources (Foucault et al., 2000).

Cultural influence in the selection of methods. The researcher is a Bolivian of mixed ethnic background, but with strong influence from highland cultures and urban settlements. She has experienced how two similar events can be interpreted and reflected upon differently in different regions of the country. This had a determinant influence through substantial use of secondary data analysis including details of history and culture for the description of the study sites. Although there may be a possibility of overemphasis on history and culture emerging from nationalistic pride or the need of cultural recognition in a research environment predominantly dominated by western influence, it is also a declaration of self-awareness by the researcher as a Bolivian, seeking to provide an alternative insider analysis of this research and of development processes in general.

Emotional distress in the evaluation of results. As a practitioner of participatory processes the involvement of the researcher in this particular evaluation was open minded seeking to understand the relationship of participation and empowerment to contribute to more effective and efficient interventions. Yet ultimately when final results came through there was a sense of emotional distress and anxiety within the researcher. The first reaction was of denial believing that there was some kind of mistake or bias embedded in the data. This led to a thorough verification the SEP implementation process (Fernandez et al., 2011a, Fernandez et al., 2011b, Polar et al., 2011a, Polar et al., 2011b), data collection, tabulation and analysis, to discard transcription errors, numerator bias, and other types of possible mistakes. Only when no significant bias was identified did the possibility of confronting the whole community of

practitioners of participatory methods emerged. This is also consistent with literature that reflects how NGO employees experience moral and emotional anxiety when confronted with the reality of non-successful interventions (Mosse, 2011a). Emotional distress gradually became a moral obligation to search for a truthful account of practices and outcomes.

Although the issues discussed in this section go beyond the scope of the impact evaluation research delivered, it reflects on the interaction between self, other and context; which have eventually shaped the research as it stands. Thus this section is a brief glimpse at an autoethnographic perception of the researcher, as a form of critique and resistance (Spry, 2006) to researcher identity scripts.

Chapter 4. HISTORY AND CULTURE

Several authors over time have highlighted the importance of history and culture as factors that determine and shape social processes (Akram, 2010, Archer, 2005, Giddens, 1984, Parker, 2000, Elder-Vass, 2010). According to Marx, individuals make their own history but they do not make it as they please or under circumstances chosen by them, but under circumstances found, given and transmitted from the past (Marx, 1976). Similarly, Elder-Vass argues that social events are multiply determined by the effect of different causal powers (Elder-Vass, 2010). Variables of history and culture in this regard are part of the determinants that interact, interfere or reinforce each other to produce social events.

This chapter will describe the general historic and cultural elements and specify the differences and similarities between study sites. The information contained in this chapter is used as the basis for a comparative analysis between cases, to understand how and why particular historic and cultural configurations influence the outcome of events and processes.

4.1 Description of historic background of study sites

This section will describe the agrarian regions of Bolivia and its current political division in order to locate the study sites geographically. These factors define, in part, the socio-cultural characteristics of the study populations and the specific production systems. In turn, these influence the nature of the interactions between people and project, and define the opportunities set in the external environment.

A general overview of Bolivia's agricultural history will be presented, followed by the specific history and evolution of the agricultural systems in each study site. Finally, an analysis of different contrasting and converging features of each case will be presented.

4.1.1 Bolivian Agrarian Regions and Political Division

Bolivia is a land locked country located in the heart of South America. It is the fifth largest country in Latin America with an extension of 1,098,581 square kilometres. Located between 9° 39' and 22° 53' of latitude south, it falls entirely within the inter-tropical region but the presence of the Andean Mountain chain in the occidental and central part of the country, give it a wide range of biophysical characteristics, landscapes, weather, soil, plants and animals. It's a country of high diversity both in terms of biological regions and in terms of the ethnic and historic background of the population. Currently it is divided into 9 departments, 112

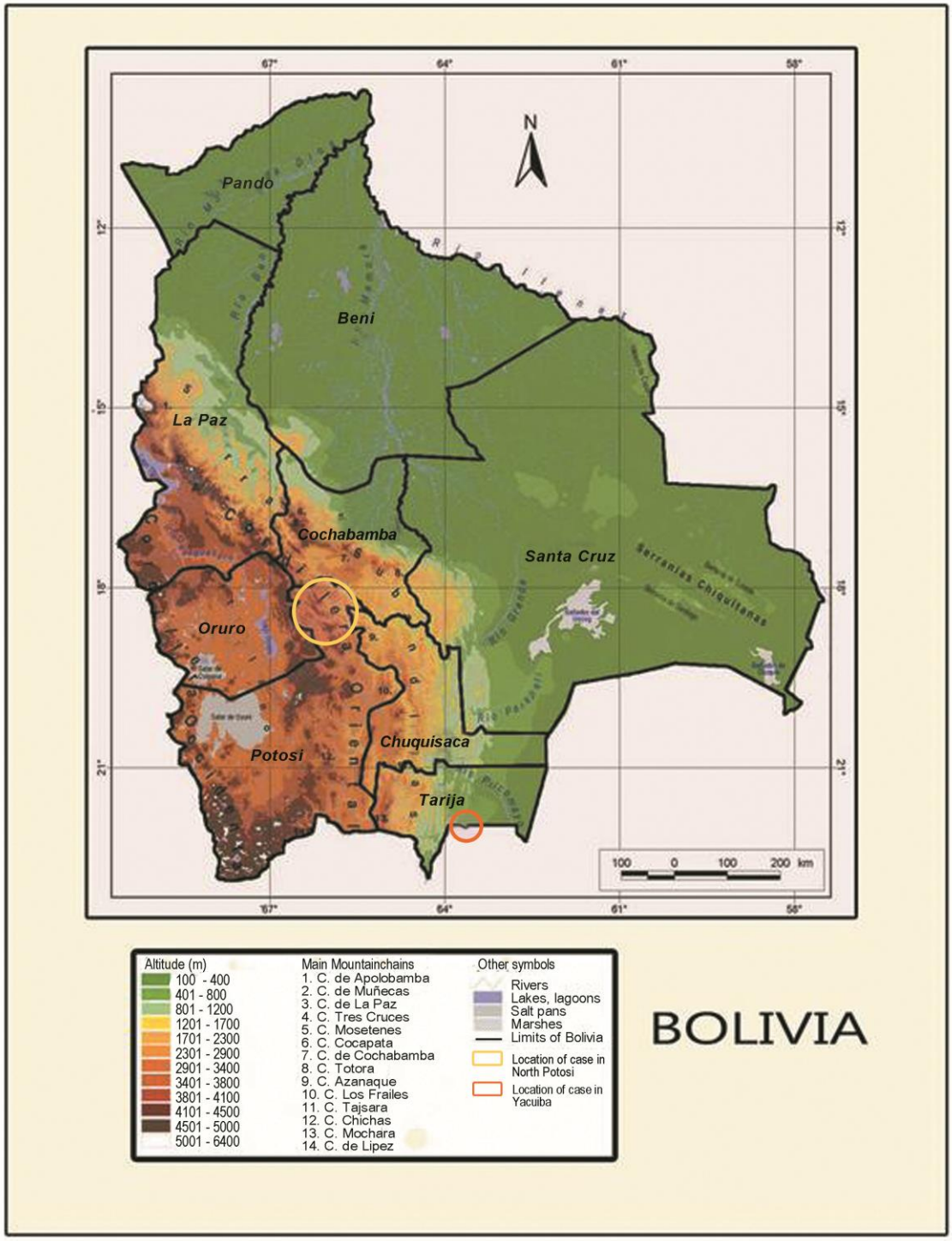
provinces and 315 municipalities (Cleaver, 2004). Most of the Bolivian population is settled along the central axis in the cities of La Paz, Cochabamba and Santa Cruz. Although the highlands were once very highly populated, migration processes towards the lowlands have increased (See Table 3.7) and larger indices of population growth are being recorded.

Traditionally three agrarian regions are recognized in Bolivia (Estrella et al., 2000). One is the highlands, also called "Altiplano" or high-plains due to their location as flat highlands above 3400 m. between two mountain chains of the Andean Mountain Range. The western chain is called "Cordillera Occidental" and runs along the border between Bolivia and Chile; the eastern chain is called "Cordillera Real" and runs through the middle of Bolivia from north to south. The second region is located between 900 and 3400 m., and includes inter-Andean valleys at the foot of the mountain chains and part of subtropical prolongations of the valleys called Yungas. This region is characterized by river valleys cool and dry at higher altitudes, and tropical and subtropicial regions with heavy rainfall as altitude descents. The third region is the "Oriente", located below 900 m., running from the foothills of the Cordillera Real to the eastern border of the country. This region includes tropical jungle, vast grasslands, subtropical jungle and semiarid and arid plains. This classification was generally used during the colony an later during the republic. It was not until after the Chaco War (1938) and through the design of the Bohan Plan (1942) that Chaco was considered an agrarian region of Bolivia. Nevertheless, it was only in 1995 during the design and establishment of the Bolivian System of Agricultural Technology (SIBTA) that Chaco became a formally established agrarian region and was part of the national research and development framework.

Figure 4.1 shows the altitudinal variations throughout Bolivia. In this map dark shades of brown up to 3400m represent the highlands also called Altiplano and Puna. Light shades of brown and yellow and even parts of the lighter green areas are Valley lands. The different green shades represent the tropical flatlands. The Chaco region is characterised by a combination of altitude and latitude that produce hot weather with some cold winds during the winter and lower rainfall. In the map it is represented by the two lighter shades of green located in the Department of Tarija at the southern extreme limiting with Argentina.

The specific location of the study sites within the country is marked with red circles. The North Potosí – Qhayanas case located in the highlands, near the slopes of "Cordillera Real"; and the Chaco case located in the dry lowlands by the border with Argentina.

Figure 4.1 **Altitudinal variations that define agricultural regions in Bolivia and location of study sites**



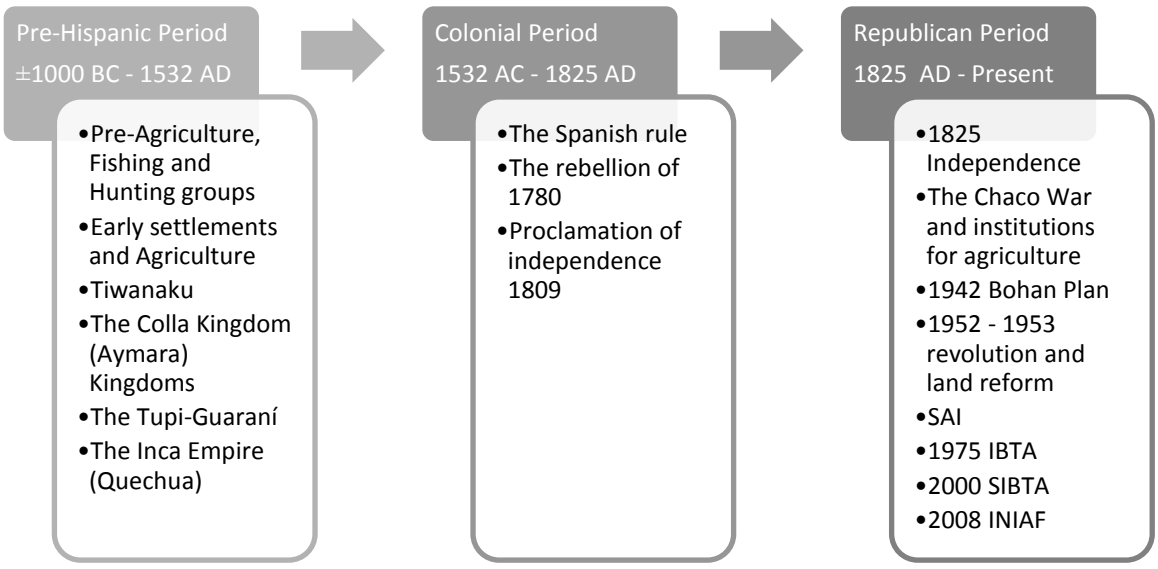
*

* Adaptation from INSTITUTO NACIONAL DE ESTADÍSTICA 2005. *Atlas estadístico de municipios 2005,* La Paz, INE.

4.1.2 General time line of Bolivian Agrarian History

From the first human settlements in the highlands of what is today the Plurinational State of Bolivia, through the Tiawanacu culture and the Inca Empire, agriculture has been the basis for the structuration of society and life. During the Colonial and Republican eras, agriculture has descended in the scale of priorities due to the importance given to the mining sector. Starting with Silver in the Colonial period and moving to tin in times of the Republic, the mining sector has structured society and shaped most of the public policies, where agriculture became but a means to support the country's extractive sector. This section will provide an overview of the agrarian tradition throughout the different time periods in order to understand the importance and role of agriculture in society. Furthermore, understanding agricultural processes and traditions will set the stage for an analysis of structures and agency of actors over time, which will contribute to our understanding of present day social phenomenon. Figure 4.2 shows an overview of the Bolivian agrarian history.

Figure 4.2 General Timeline of Bolivian Agrarian History



4.1.2.1 Pre-Hispanic Period 1200 BC – 1532AC

The origin of the American man is traced back migrations from Asia some 30 to 50 thousand years ago, either evolving from a singular Mongolic migration through the Bering Strait or through several migrations in different periods of time (Meggers, 2010, Jett, 1978) either through the Bering Strait, transpacific migrations from Indonesia (Ibarra Graso, 1989), or

Iberian migrations (Stanford and Bradley, 2012). The fact is that, different racial types of indigenous groups developed in the territory known today as Bolivia. D'Orbigny classified the South American indigenous peoples into three main racial types: the Brasilio-guaraní, the Pampean and the Ando-peruvian (Ibarra Graso, 1985). Although several other classifications are available the one offered by D'Orbigny is simplified and serves for the purpose of this referential chronology. Furthermore it is important to mention that the Ando-peruvian racial type developed mainly in the Altiplano and Valleys, the Basilo-guaraní in Oriental tropical lands and Chaco, and the Pampean in the southern Chaco region near the border with Argentina (Ibarra Graso, 1985).

i. Pre-Agriculture, Fishing and Hunting Groups

Archaeological sites of the first pre-ceramic and pre-agricultural people are found in Viscachani, San Pablo de Lipez and Camacho in Bolivia (Ibarra Graso, 1986). The first fishing and hunting groups developed in the highlands and their descendants are the Urus and Chipayas that live near the borders of Lake Titicaca and Lake Uru-uru. Primitive agriculture that complemented the main fishing and hunting needs of the population began around 8000 B.C.(Ibarra Graso, 1986). Primitive agriculture brought from the old world and through internal migrations some species such as cucurbits, amaranths and lupins (Ibarra Graso, 1986, Brücher, 1987) among others that adapted and evolved in the Americas; it also found in the new world several new species that were domesticated such as maize, cotton, potato, cacao, tobacco, cassava, groundnuts, tomato, quinoa, avocado, papaya, rubber, Brazil nuts, among many others (Bruhns, 1994, Towle, 2007).

ii. Early Settlements and Agriculture

The first settlements in the Titicaca Basin developed agriculture, textiles and ceramics around 1200 B.C. in small agriculturally based villages (Kolata, 1983). During this period of time the Wankarani culture prospered from the central to the north and north-eastern borders of Lake Poopo (Bruhns, 1994) Their settlements were permanent, they grew potatoes and quinoa, and herded cameloids. The first evidence of control of land in the valleys began with the Wankarani people that established the first sites in the mesothermal valleys (Platt et al., 2006).

The Chiripa culture had a similar economic orientation as the Wankarani. It occupied the southern end of Lake Titicaca around the same time as the Wankarani (Kolata, 1983). Other settlements in the Titicaca basin during this period of time include the Qaluyu on the northern shore of Lake Titicaca (Plourde and Stanish, 2006) opposite to the Chiripa, and the Pukara that

grew to truly urban proportions (Stanish, 2003) some 75 km northwest of Lake Titicaca's northern shore.

iii. Tiwanaku

Around 300 B.C. the Tiwanaku culture began to prosper in the Titicaca basin. During its initial stages Tiwanaku developed in the southern Lake Titicaca region and later expanded to occupy the whole lake basin (Kolata, 1993, Plourde and Stanish, 2006, Sagárnaga, 2007). Its location within the Titicaca Basin allowed access to abundant fish resources, wild birds, herding grounds for cameloids and predictable rainfall that was used for farming. Nevertheless, certain food products were unavailable in the region and a system of vertical control of ecological regions was used. Wood, coca, maize and other products were brought from lower altitudes in exchange for other agricultural products, livestock, textiles and pottery; in a system of economic colonies that were the prototype of the later Inca Empire. Tiwanaku grew from local villages to a centre of monumental architecture (Kolata, 1983) and trade (Browman, 1997).

The most relevant trait of the Tiwanaku culture in terms of agriculture was the vertical control of ecological regions. To achieve this vertical control and ensure access to a diversity of products, economic colonies were established through an expansion process that reached the edge of the Bolivian jungle located east of the Altiplano, and the pacific coast south of Peru and North of Chile to the west of the Altiplano (Ibarra Graso, 1986, Kolata, 1993, Stanish, 2003). Given the high altitude of the Titicaca Basin, the Tiwanaku people developed farming techniques such as flooded raised fields called *sucakollus*, terraced fields and artificial ponds called *q'ochas* (Kolata, 1993, Ponce Sanginés, 2004). These technological innovations, as well as the commercial innovations linked to the transport of products through llama herds, and institutional innovations that enabled a specialization of labour and the labour for state projects "mit'a" (Plourde and Stanish, 2006, Ponce Sanginés, 2004, Stanish, 2003), were some of the traits that enabled expansion and growth of the Tiwanaku culture. The sustained growth of Tiwanaku is attributed to a non-violent expansion to the valleys (Platt et al., 2006) that absorbed cultures, gaining power through a controlled flow of products from lowlands to highlands, the reciprocity system and the control and redistribution of surplus by the elites. The reasons for the disintegration of Tiwanaku are not clear, yet archaeologists believed that a dramatic shift in climate with a significant drop in rainfall in the Titicaca Basin around 1000 A.D. (Ortloff and Kolata, 1993) were the cause.

iv. The Colla Kingdom (Aymara)

After the disintegration of Tiwanaku, chiefdoms denominated Marcas emerged throughout the Andes. The Colla Kingdom emerged around the 12th century and persisted until the 15th century when it was conquered by Inca Pachacuti (Platt et al., 2006). It was composed by several ethnic clans currently denominated "Señorios Aymaras" given the common language used by these ethnic groups. The Colla Kingdom was ruled by a ruler called "Zapana" or only lord; the Kingdom was divided into smaller chiefdoms called Marcas ruled by local lords called Kuracas or Mallkus (Saignes, 1991). The Aymaras extended through the high Andes of Occidental Bolivia, Southern Peru, Northern Chile and Northern Argentina (Dittmar, 1996, Goldstein, 2005). The Señorios Aymaras of the Colla Kingdom were divided into two main groups: The Mallkus of Collao and the Qaraqara-Charka confederation (Platt et al., 2006). A detail of the aggregation of these ethnic groups, nations or chiefdoms is presented in Table 4.1, while Figure 4.3 presents their geographic location in the Andean region.

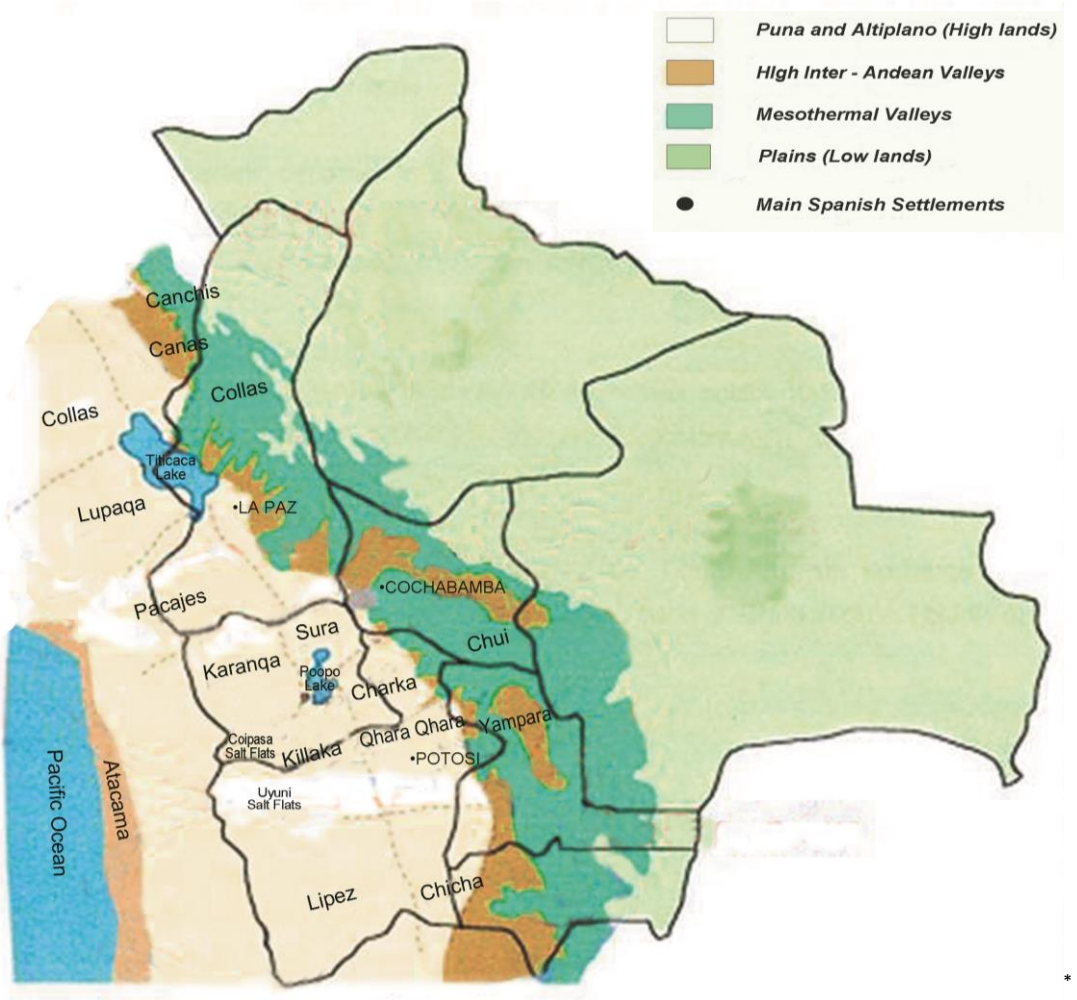
Table 4.1 Ethnic groups or nations in the confederations of the Colla Kingdom

Confederations or independent Markas	Ethnic groups, nations, chiefdoms or Markas (named from North to South)
Markas of Puno	Canchis, Cana
Collao	Colla, Lupaqa, Pacaje or Pacasas (Uma-suyu and Urco-suyo)*
Qaraqara-Charka	Qaraqara, Karanqa, Killaka (o Asanaqui), Charka, Sura, Chicha, Chuy Yampara
Marka of the South	Lipez†

Source; Own elaboration as a compilation of BOUYSSE-CASSAGNE, T. 1978. L'espace aymara: urco et uma. *Annales. Histoire, Sciences Sociales,* 33**,** 1057-1080, MARKHAM, C. E. 1871. On the Geographical Positions of the Tribes Which Formed the Empire of the Incas, with an Appendix on the Name "Aymara". *Journal of the Royal Geographical Society of London,* 41**,** 281-338, PARSSINEN, M. 2002. Confederaciones interprovinciales y grandes señores interétnicos en el Tawantinsuyu. *Boletin de Arqueología PUCP***,** 19, PLATT, T., BOUYSSE-CASSAGNE, T. & HARRIS, O. 2006. *Qaraqara-Charka: Mallku, Inka y Rey en la Provincia de Charcas (siglos XV-XVII). Historia antropológica de una confederación aymara. Edición documental y ensayos interpretativos,* La Paz, Plural Editores.

* A division introduced by the Incas where Uma-suyo refers to the water side and Urco-suyo to the hill side of the region inhabited by the Pacasas

Figure 4.3 Geographic location of chiefdoms in the Colla region of the Andes



* Source: Personal elaboration based on BOUYSSE-CASSAGNE, T. 1978. L'espace aymara: urco et uma. *Annales. Histoire, Sciences Sociales,* 33**,** 1057-1080, SAIGNES, T. 1986. *En busca del poblamiento étnico de los andes bolivianos (Siglo XV y XVI),* La Paz, MUSEF.

These Señorios regulated themselves through the vertical control of different ecological regions, a feature that was also present in the Tiwanaku culture. In order to access a diversity of products the high Andean people depended heavily on the relation with the coast and valleys (Goldstein, 2005). During the Señorios Aymaras these relations were fostered through the colonization of peripheral regions located at different altitudes and thus different climatic conditions (Stanish, 2003). The control of llama herds for transportation of products, a legacy of the Tiwanaku culture enabled the flow of products to the Altiplano from lower lands (Stanish et al., 2010). Most of the disputes between groups were due to pasture lands because of the importance of llama herds for product transport (Steward and Faron, 1959). The forms of labour used for large government construction activities in Tiwanaku remained a common

practice among the Aymaras and were used for agricultural production as a form of taxation imposed by the ruling elites (Ibarra, 1986).

v. The Tupi - Guaraní

To the east of the Andes, the territory known today as Bolivia includes Amazonian Lowlands with high precipitation and temperature, and Southern Lowlands also known as the Chaco. The oldest archaeological sites in this region were attributed to the Tupi-Guaraní people that initially established along the Atlantic coast and lower rivers of South America around 500 - 700 A.D. (Meggers, 2010). These people practised tropical horticulture in the forest and spread south and to the interior of the continent up to Bolivia and Paraguay in the 16th century (Bruhns, 1994). There is little archaeological evidence to characterise the culture and history of the tropical-forest people, so most classifications and reconstructions are inferred from the distribution of linguistic groups and cultural features (Steward and Faron, 1959). Most dialects of the Tupi-Guaraní are remarkably similar and imply fairly recent dispersal.

vi. The Inca Empire

The Inca Empire developed in the Highlands of Peru during the 13th century, settling its capital in Cusco. During the 13th and early 14th centuries the "Tahuantinsuyo"[78] expanded throughout Peru, large parts of Ecuador, western and south central Bolivia, northwest Argentina, north and central Chile, and southern Colombia (Hyslop, 1988, Murra, 2002). The official language of the empire was the Quechua yet in every region local languages and variants of Quechua were spoken. The Empire itself was an aggregation of languages and cultures and ethnic groups with various degrees of loyalty to the ruler. The Incan civilization was predominantly an agricultural society (Malpass, 1996), and the economy of the Inca Empire was based on exchange from highlands to lowlands and taxation through luxury goods and labour (Stanish, 2003).

Collasuyu (formerly occupied by the Colla Kingdom) was the largest and southernmost of the four quarters of the Empire and was also its axis of economic and demographic power (Moseley, 1993). It extended from Peru through the Bolivian highlands into Argentina and northern Chile. Although Quechua was the official language of the empire many of the local languages persisted, such the case of Aymara in the (Bolivian) region formerly occupied by the Señorios Aymaras.

[78] Name given to the Empire by the Incas themselves. It translates from Quechua as "The Four Regions"

In the Empire, land and the entire productive apparatus was owned and controlled by the government. Nevertheless, there was no clear differentiation between state, religion and community at the local level, thus showing a development of the Inca state both from bottom up and from top down (Gose, 1993). There was no free enterprise or accumulation as the state controlled all the means of production. The axis of power was the control over water (Gose, 1993) and land, both being state regulated. Land was distributed between state, temple and families, where families received land according to the size of their family and needs (Silverblatt, 1978). Families had to work on temple plots, than government plots and finally on their own plots. If men were to be absent on other duties the family would be supported by neighbours. The sick, elderly, disabled or otherwise unable to produce their own food would be provisioned by the government (Steward and Faron, 1959). Government control also facilitated the vertical flow of products between different altitudinal areas.

Technology for agricultural production in the Inca Empire was well advanced. People cultivated and adapted a wide diversity of crops and varieties to an extensive range of ecosystems. Given the lack of levelled land in the valleys, people terraced mountainsides (Goodman-Elgar, 2008) and channelled water for production through extensive networks of canals (Erickson, 1988, Gose, 1993). Fertilizer from cameloids' manure and fallen leafs were used inland while bird *guano* was used in coastal regions (Steward and Faron, 1959). Farming tools were adapted to hilly terrain and manpower since there were no domesticated animals suitable for agricultural work. Agricultural practices were guided by a seasonal ritual calendar (Murra, 1973, Murra, 2002) that was directed by state supervisors, and that included ceremonies and festive rituals. The construction of state projects such as temples and roads was carried out by man on obligatory drafts known as mit'a at a rate of 10% of the male able population (Steward and Faron, 1959).

The system of vertical control allowed communities and villages settled in the highlands to have access to farmlands located in different ecological regions. These other regions in lower areas were managed by members of the same communities and villages through satellite settlements temporarily or permanently occupied (Murra, 2002). The maintenance of such satellite settlements in different regions enabled the communities and villages established in the highlands to be self-sustainable and not dependent on trade or merchants (Moseley, 1993).

4.1.2.2 Guaraní- Ava or Chiriguano migrations and distinctive features

During the 16th century different ethnic groups of the Tupi-Guaraní[79] family constantly migrated from Paraguay and Brazil into the territory known today as Bolivia (Ibarra Graso, 1989). Migration processes took place because of demographics and pressure from other indigenous groups. Furthermore, their belief and search for the "land with no evil" promoted their continuous migration. These people spoke Guaraní and called themselves "Ava", meaning human being. The term Chiriguano was never accepted by them as it was a derogatory denomination used by Incas when they referred to the natives that continuously exercised political and military pressure on the eastern frontiers of the Inca Empire (Steward and Faron, 1959). To maintain the frontiers of the Inca Empire under such continuous pressure and confrontation, the Incas made concessions of land in the valleys to the Qaraqara, Charca, Chicha and Chui (Platt et al., 2006) in order for them to act as the Inca's soldiers and defenders of the Empire's frontiers.

The Guaraní are known as warriors and free men. It is an ethnic group that has reached high levels of technological, productive and cultural development, that systematically refused to become a state (Lewis and Mosse, 2006). Only during war times they accept one supreme command; in all other situations they perceive themselves as a confederation of free men "iyambae"[80]. Their culture is based on principles of egalitarianism and community life, thus opposing any type of submission.

4.1.2.3 Colonial Period 1532 AC -1825 AC

When the Spanish Conquistadores arrived in America, in the Inca Empire the indigenous population had reached 10 million people (Estrella et al., 2000, Mesa et al., 1997). Human settlements were mainly located in the highlands and through a system of vertical control communities had access to a wide variety of food and consumption products from different ecological regions. The indigenous settlers were imminently farmers using gold and silver for decorative purposes.

The initial conquest of the Inca Empire was one of the quickest in history (Moseley, 1993), as Spaniards took advantage of the civil war and conflict existent between the two Inca brothers Huascar and Atahuallpa. Yet the most effective weapons, that diminished and in some cases

[79] Tupi-Guarani people have the reputation of being cannibals. Some groups derived from this linguistic group ate pieces of their war captives' bodies. The actual word for "eating of human flesh" exists in the Tupi-Guarani language.

[80] Ijambae o Iyambae is a Guarani word that can be literally translated as without owner

destroyed the demographic foundations of society, were measles, smallpox and other Old World diseases (Cook, 2004). Despite this, conflict and resistance of natives continued for 40 years until Tupac Amaru, the last Inca ruler was captured and executed (Moseley, 1983)

i. The Spanish rule

The Spanish rule took advantage of several of the Empire's features to spread and strengthen power in the high Andes and to change the basic economic features. Agriculture went from the main productive activity to a role in the provision of goods and services to the mining sector (Platt et al., 2006). As the importance of mining grew, the Spaniards used the former labour drafts known as mit'a to recruit workers for the mines. Working conditions in the mines were so difficult that many natives died during the time of their mit'a[81], yet communities were forced to provide workers on a regular basis, far surpassing the Inca use of this system. The system of vertical control was destroyed and the systems of *encomienda, repartimiento* and *hacienda* were established (See section 4.2.3). Through the *encomienda* and *repartimiento* natives were forced to farm the land and produce high tributes to the Spanish ruler. The native pattern of *yanaconas* [82], or personal servants (Murra, 2002) was expanded and modified severely affecting the structure and stability of families.

The Spanish rule had devastating effects on the sustainability of agricultural systems in the Andean region. Large portions of land formerly used for subsistence crops were used for commodities or luxury products demanded by the Spanish. Among many crops, wheat was introduced in the Altiplano and vineyards in the valleys of the south; new species of livestock were also introduced (Gade, 1992). Livestock production diminished land available for food production. These constraints restricted the amount of available food, farm communities were unable to support their members and the population gradually diminished.

The adverse circumstances introduced by the Spanish rule were never peacefully accepted by the local indigenous population. Since the arrival of the Spaniards, a continuous chain of rebellious movements and resistance took place. In 1532 when the Spanish arrived in Bolivia an indigenous movement rose in the highlands to resist colonization and was not fully

[81] Mit'a was a concession of labour for mining. One seventh of the indigenous population (male of working age) located in the mining settlements was assigned to forced labour PUENTE CALVO, R. 2011. *Recuperando la memoria. Una historia crítica de Bolivia,* La Paz, UPS Editorial.

[82] Yanacona is the plural of yana, meaning domestic service person. In the colonial period the connotation of yanacona went beyond domestic service and into specialized skilled worker. It was an individual with no links to a community that provided a broad range of services. ESCOBARI DE QUEREJAZU, L. 2011. Mano de obra especializada en los mercados coloniales de Charcas. Bolivia, siglos XVI-XVII. *Nuevo Mundo Mundos Nuevos.* January 31, 2011 ed.: Debates.

controlled until 1572, with subsequent rebellions in later years (Lewis and Mosse, 2006). In the lowlands of Chaco a similar process took place. From 1564 to 1585 waves of Guaraní assaults attacked the forts established by Spaniards in the southern valleys and Chaco, with later outbreaks for the following two centuries (Lewis and Mosse, 2006). These rebellious movements gave way to the insurgent rebellion of indigenous movements during the second half of the 18th century.

ii. The great rebellion in the highlands and the lowlands

The increased burden on native communities and the corruption of the numerous Spanish officials assigned by the crown lead to general unrest and "The Great Rebellion" of the highlands broke in Peru in 1780. The rebellion in Peru was led by José Gabriel Condorcanqui Noguera also known as Tupac Amaru due to his direct lineage with the last Inca (Stavig and Schmidt, 2008). Amaru is captured and killed along with all of his family in 1781 (Mesa et al., 1997, Stavig and Schmidt, 2008), yet the rebellion continues and breaks through this time in Bolivia. Julian Apaza, a common Aymara trader from Ayoayo region took the name of Tupac Katari in memory of Tupac Amaru and Tomas Katari an Aymara leader from Potosí killed in the initial stages of the rebellion (Lewis and Mosse, 2006). Katari and his rebel troops of 40,000 men seized La Paz city. The Great Rebellion of the highlands sought to re-establish former world orders and claim land and liberty (Paz and Rua B., 1969). It was the beginning of the decline of Spanish rule in the Collasuyo.

In the lowlands several "tumpa"[83] Guaraníes emerged in 1788 in different regions, and led a rebellion that destroyed missions and Spanish settlements in the Chaco region (Lewis and Mosse, 2006). Although local armies of Spanish descent fought against the rebels, the struggle continued for several years. In 1799 the Guaraní leaders from all assemblies[84] at the foothills of the Oriental Andean mountain range gather to fight the Spanish colonizers(Lewis and Mosse, 2006) and began a chain of destruction of missions and settlements. The Guaraní met the Spanish troops in 1800 and fighting continued until forces declined, leaving no winners.

An important difference to be highlighted in the uprising and rebellion from the highlands and the lowlands is the fact that although they occurred in the same time frame, they were completely independent from one another. Neither the indigenous people from the highlands nor the inhabitants of the lowlands felt part of "Audiencia de Charcas" geo-political

[83] Tumpa or tüpa is a name given to a man embodied by a sacred vocation to lead his people to war.
[84] An assembly is a form of organization of the Guarani people. It is given the name of assembly due to its horizontal nature.

organization that later became Bolivia. The rebellion in the highlands developed over traditional structures, and leadership strengthened local beliefs and systems; while in the lowlands leadership emerged and structures were formed to defend their lifestyle and condition of free men with no owner.

iii. First proclamation of independence in 1809

In 1809 a new rebellion broke out in the city of La Paz where a *criollo*[85] of Spanish descent proclaimed freedom from the Spanish rule leading an army of 1000 men to armed conflict with Spanish troops (Mesa et al., 1997). This rebellion was the beginning of further outbreaks that lead to the war of independence, the later proclaimed independence in 1825 and the creation of Bolivia as a modern nation, in the former colonial administrative region known as "Audiencia de Charcas".

The main difference between the previous rebel outbreaks and the first proclamation of independence lies in the origin of rebels. Despite the numerous episodes of rebellion and struggle experienced by the indigenous population since the arrival of the Spaniards in their land (Lewis and Mosse, 2006), it is the rebellion of the *criollos* of Spanish descent that historiographers have labelled as "the first proclamation of independence". There was high participation of indigenous population from the highlands and the lowlands in the war campaigns that lead to independence after the *criollos'* proclamation of independence (Lewis and Mosse, 2006). Nevertheless, the newly formed state did not only ignore the demands of the indigenous population, but it also breached the first agrarian reform law that emerged in the continent through the presidency of Simon Bolivar[86] (Paz and Rua B., 1969, Lewis and Mosse, 2006).

4.1.2.4 Republican Period 1825 AC - Present

i. 1825 Independence and Agriculture

After the proclamation of independence and the establishment of the new government in 1825, there were no significant changes in the agricultural and productive patterns. Although mit'a and all forms of slavery or forced labour were abolished (Mesa et al., 1997) in the highlands, land was still in hands of the descendants of the Spanish and tribute was collected

[85] Term applied to designate an individual born in the Americas who had a European descent, to differentiate him from the indigenous population.
[86] Simon Bolivar (1783-1830) known as "The Liberator" was a key figure in the liberation of Latin America from Spanish Rule, Bolivia's first president and the inspiration for the country's name.

from the indigenous population. The state was too poor to provide services and had to expropriate land from the church in order to generate income. Due to the abolition of mit'a the mines became less active and the state sold some mines to private investors.

Land was owned by the new republican elite and thus the control and decision over production lay in the hands of these landowners. It seemed as if power in the highlands had only shifted hands from the Spanish to the new mestizo class that took over the control of productive means under new patterns of economic arrangements.

In the lowlands independence meant nothing for the indigenous people that were still struggling to defend their land from colonization not by the Spaniards this time but by the new republican elites. The struggle continued during the early republican period and reached a turning point in 1892 when in a massive mobilization the Bolivian army massacred more than 6000 Guaraní (Combes, 2005). This moment in time marks the end of large battles in the Chaco and the collapse of the Guaraní resistance, giving way to further advancement of the power of elites through the establishment of haciendas.

ii. 1952 – 1953 Revolution and Land Reform

Although lead by social unrest (Chonchol, 2003), the land reform had a political connotation rather than a development direction, thus failing to achieve improvement (Wennergren and Whitaker, 1975, Galloppo, 2003). The proportion of land reformed was large yet it only dealt with land in the highlands where most of the population was settled (Chonchol, 2003). The land reform was in essence a change in agrarian structures (Government of Bolivia, 1953) that started a process of parceling of land from landowners in the highlands and valleys, turning former labourers into smallholders; giving way to estates settled in the lower lands to become capitalist ventures (Paz Ballivian, 2003). In highlands and valleys, agricultural productivity fell rapidly after the land reform and continued its decline for more than two decades (Wennergren and Whitaker, 1975). Many former landowners received governmental concessions and established larger states throughout the less populated lowlands, where productivity increased; yet this settlement had direct consequences on lowland indigenous peoples. Native people were in some cases pushed towards the jungle and into lands not appropriate for agricultural production (Urioste, 1992). In other cases they were held as labourers that came with the land in conditions of servitude (UN Permanent Forum on Indigenous Issues, 2009).

4.1.3 An overview of agriculture in the history of Bolivia

Throughout history, agriculture has been the axis of subsistence, social organization, and conflict in the Andes. The first settlers around the Titicaca Basin and the cultures that evolved until the Tiwanaku culture successfully domesticated and adapted food crops, developed manual tools and adopted farming practices that enabled their survival and ensured food security. The Tiwanaku culture flourished by enhancing agricultural production through the development of technological innovations like the *sucakollus* and *q'ochas*, and institutional innovations such as the vertical control that allowed a flow of products from different regions in order to sustain the settlements in the highlands. The different Señorios Aymaras, the Aymara Kingdom and the Inca Empire that followed Tiwanaku further developed technological practices incorporating the terraces, water canals, and expanding the domain of the vertical control of ecological regions. In the different cultures land was managed by the ruling elite and by the Inca in the latter case, yet this management was not a total control but an allocation of land and labour by the state, where communities had a share. Nevertheless in the absence of trade, accumulation and currency, the state ensured basic conditions for all.

The arrival of the Spaniards destroyed the production system by introducing new crops, commodities, livestock and mining and overall by eliminating the vertical control that was the basis of an adequate flow of products from the lowlands. Although the 1825 independence abolished all forms of forced labour, it did not eliminate tribute (Lewis and Mosse, 2006) nor did it re-establish the former systems of production. The Land Reform of 1953 redistributed land among farmers who had limited means to produce (Paz Ballivian, 2003). Communities in the highlands were left with highly unproductive land and unable to maintain their needs. The later processes of institutionalization for agriculture focused on the lowlands, leaving highlanders with little or no support. Institutional models today similarly seek to enhance participation without providing clear means to the exercise of that participation.

In terms of geography and migration, before the arrival of the Spanish, the largest human settlements were established in regions of high altitude exploiting valleys and tropical lowlands through temporary auxiliary settlements (Murra, 2002). After colonization, the Spanish centred their attention on the highlands as well due to the exploitation of mines located in Potosí and Oruro. During the republican period there was a gradual shift towards the valleys due to their potential in agricultural production to support cities and the mining sector. It was only during the second half of the 20th century, with the construction of the Cochabamba-Santa Cruz highway that the lowlands were integrated into the central axis of the

country. Since then migration flows have increased considerably, internal migration flows from east to west or from highlands to lowlands being an important characteristic (Cleaver, 2004).

4.2 History and Evolution of Agricultural Systems in North Potosí

To understand the establishment, development and evolution of agricultural systems in North Potosí, one must understand the ecology, natural environment and the worldview that settlers had in different periods of time. It is this worldview, the ecological environment, and the social characteristics that shape agrarian systems. This section will present a general description of the natural environment, the evolution of worldviews with the consequent social changes, and the patterns and modifications in agrarian systems in North Potosí.

4.2.1 The natural environment in North Potosí

The North Potosí region is located on the eastern slopes of "Cordillera Real", the occidental branch of the Andean Mountain range. It is located between the *Altiplano* that extends between the two branches of the Andean mountain range, and the oriental slopes that later drop towards the Amazon. Located at the very heart of "Cordillera Real", the landscape is characterized by highly irregular land, high mountains with terrains of steep slopes in altitudes that vary from 2500 to more than 5000 m. Despite being located in the inter-tropical region of the southern hemisphere, the high altitude of the terrain produces cold and dry weather. Average temperature and rainfall vary according to altitude, and latitudinal distance from the equator, yet rainfall is notably reduced due to the barrier produced by the western slopes of "Cordillera Real" with the humid and warm winds coming from the north west of the Amazon basin (Cleaver, 2004). Most of the humidity collected by these warm winds produces high levels of rainfall in the western slopes of "Cordillera Real" thus having fewer and fewer rain as one moves towards the east.

In the North Potosí region there are 3 main ecological levels of production, each one with their own characteristics (Platt, 1982). Nevertheless it is important to mention that Qhayanas is located at high altitude and farmers in the community have land located only in the first two ecological levels of herding land and Puna agriculture (See Table 4.2).

Table 4.2 Ecological levels of agricultural production in North Potosí

Level and Altitude	Main species
High Andean herdings (4200 – 4600 m.a.s.l)	Natural pastures for llama and alpaca grazing, In the last century sheep herds have increased.
Puna Agriculture (3500 – 4200 m.a.s.l)	Potatoes *(Solanum juzepczukii, Solanum ajanhuiri, Solanum andigenum)* Cañahua *(Chenopodium pallidicaule allen)* Quinoa *(Chenopodium quinoa Willd.)* Papa Lisa *(Ullucus tuberosum)* Oca *(Oxalis tuberosum)* Isaño *(Tropaeolum tuberosum)* Barley *(Hordeum vulgare)* *Broad Beans (Vicia faba)* *Onion (Allium cepa L)* Tarwi (Lupinus tarwi)
Valley Agriculture (2000 – 4200)	Potatoes *Solanum andigenum)* Quinoa, Papa Lisa, Oca, Isaño, Wheat, Corn, Squashes, Chilli Peppers, Broad Beans, Tarwi, various fruit species, Onions and other vegetables.[1]

[1] Source: Own elaboration based on interviews, survey data and classification by PLATT, T. 1982. Role of the ayllu in the reproduction of the petty commodity regime in Northern Potosi (Bolivia). *In:* LEHMANN, D. (ed.) *Ecology and exchange in the Andes.* 41 ed. Cambridge: Cambridge University Press..

One of the study sites is Ayllu Qhayanas, in the Municipality of San Pedro de Buenavista, in the province of Charcas of Potosí (See Figure 4.1). This ayllu is located at high altitude in the land of the former Qaraqaras or Charca Rojo[88] Kingdom, in the Qaraqara-Charca confederation.

For a more detailed description of current climatic conditions of the Ayllu, and 10 year trends see Table 3.6, and for more detail on the current local production and technology see 3.7.1.

4.2.2 Society and worldview in the high Andes

From the first settlers of the Andean highlands through the Tiwanaku culture, the Aymara Kingdoms and the Inca Empire, the worldview of society has maintained in essence a non-anthropocentric perspective, perceiving humans as another component of nature. Religious rituals reflect the integrity of the world as one system with a delicate balance that is mirrored through weather, plants, animals and humans. The spiritual is reflected on everyday life and thus phenomena are manifestations of the spiritual as a reflection of the interaction between the different components in the natural system (Buechler and Buechler, 1971).

[88] The Charcas Kingdom was divided into two areas, Charcas Rojo located north with more highland terrain and Charcas Blanco located at lover altitude with more valley land. The Charcas Rojo later became Qaraqara.

Kinship and group belonging is a highly persistent trait in Andean societies. Its origin dates back to the first settlers that relied on extended family groups to provide the needs of all their members. This pattern was strengthened due to the extremely harsh ecological conditions of the high Andes and the vertical landscape that limited large scale production and flow of products from region to region. For this reason the Tiwanaku people, the Aymara Kingdom and even the distant Inca Empire consolidated a system based on group kinship relations. This fostered satellite settlements for mostly temporary migration to lower areas. These settlements enabled the production of agricultural crops that did not prosper in the high Andes due to harsh environmental conditions. The production would later be transported towards the main settled areas in order to ensure adequate diets for the group as a whole. Thus kin members that stayed in the highland settlements would rely heavily on those who migrated. Elements of migration arrangements continue to be observed today in both, internal migrations within the country (Buechler and Buechler, 1971), or even external migrations to other countries and even continents.

4.2.3 Agrarian Systems in North Potosí

Before the Spanish conquest the socio-economic and political organization was based on the **Ayllu**. This system dates back to the Tiwanaku culture and continues to be the axis of organization in the Colla Kingdom and the Inca Empire. The ayllu is a land-related social unit defined by kinship relations, which occupies a number of communities sharing a common trajectory. It is a linking institution that binds a group together (Prada Alcoreza, 2008). Within an Ayllu members are bound by mutual obligation where giving and receiving is a cyclical process understood as **reciprocity**. Reciprocity is the basis that fuels agricultural production, enabling members to receive support and to offer it to others or to the main landowners. Despite the embedded concept of equality and balance in the ayllu's reciprocity relations, in practice and throughout history ruling elites of landowners were in charge of redistribution, these processes being unequal yet publicly justified by the large feasts and festivals provided by the elite as a community obligation and means to legitimize and reinforce their leadership.

During the Tiawahacu culture, the Colla Kingdom and the Inca Empire, the ayllu was the basic organization unit that enabled taxation through "reciprocal" work on land of the elites or through mit'a as a form of labour on state projects. Ayllus were managed by ruling elites that were in charge of redistribution within the ayllu and of organizing and meeting the taxation requirements of the state.

During the early colony local ruling elites were still in charge of ayllus and tribute, both in the form of produce and labour, was organized through the leaders also called Curacas or Mallkus. The power of the ruling elites in North Potosí was legitimized and reinforced through their control of the eastern flanks of Cordillera Oriental, from the high Puna lands with their mineral wealth, through maize valleys to the far away "islands" or enclaves in the tropical regions of Tiraque where coca was produced. Through this regional control they were able to provide communities with a range of products in exchange for their labour and services (Platt et al., 2006). The first step in the destabilization of this system by the Spaniards was the division of the land controlled by the elites in North Potosí (Province Charcas[89]), into two provinces Charcas and Chayanta[90]. This division broke the integrity of the land and elites were denied access to their land and people in the lower valleys (Platt et al., 2006).

During the Spanish rule people from the high Andes were held in virtual serfdom (Buechler and Buechler, 1971) through different established arrangements that will be described below.

Encomienda: A type of protectorate and distribution of the indigenous population for tribute collection purposes. The Spanish crown entrusted appointed individuals to care for the spirituality and temporality of the indigenous population in exchange for services that were collected as tribute (Mesa et al., 1997). The *encomendero* who ruled over land and people was to care for the souls of the indigenous people assigned to him and provide evangelization in the Catholic faith. Tribute was to be paid in cash, or in kind including different forms of labour.

Repartimiento: A system of labour supply where indigenous people were assigned to work for Spanish initiatives for low wages that were paid into communal treasuries. These funds were then distributed between the *corregidores* who governed the indigenous people and the Spanish Crown. This system was the main source of labour for the mines in Potosí, creating high mortality and suffering among indigenous families (Buechler and Buechler, 1971).

Both the *encomienda* and *repartimiento* systems were based on the traditional indigenous social structures. Local elites and leaders called *Corregidores*, *Curacas* and *Mallkus* organized labour on the land they controlled over different regions. The tribute collected reinforced the power of the elites and provided the required share for the Spanish Crown. In the *encomienda*

[89] Province Charcas covered the land controlled by the Qaraqara and Charka ethnic groups in the oriental flanks of the south Andes. From the high mountain sides and puna, through maize valleys, and down into the edge of the rain forest.

[90] Chayanta is the province that persisted until today covering the region of North Potosí. Most of the land of the Chayanta province is located in highlands, puna and small sections of inter-Andean valleys. Province Charcas holds most of the maize valleys and segments at the edge of rainforest.

tribute was usually collected as products while in *repartimiento* families had to provide a male worker usually for the mines.

Hacienda: The hacienda system was very similar to the *encomienda* that was established by colonizers and that initially was not recognized by the Spanish Crown. In a hacienda, the Spaniard owned the land with the labour force of the indigenous population that lived in it (Keith, 1976). This system was legalized by the Spanish Crown from the 1650 onwards and it gradually replaced the *repartimiento* in the early 18th century.

After the independence of 1825, haciendas proliferated, increasing in number and size. Indigenous communities and local leaders lost even the little protection provided by the Spanish Crown (Buechler and Buechler, 1971), thus falling entirely in the hands of the national elites of Spanish descent.

In terms of decision making on agriculture and technology issues, different shades of power manifested in different moments of history.

During the Pre-Incaic period decisions over agriculture in terms of what, when and where to produce, were in the hands of the ruling leaders or elites, although strongly influenced by community meetings that deliberated over the best alternatives. Production was organized around a cyclical festive calendar that marked the most important events and production times throughout the year. The leaders and elites were in charge of providing during these festive events. During the Inca period there were no significant changes in terms of decisions over agriculture since ayllus remained as the basic organizational structure and local elites kept their wealth and influence.

The most significant changes in decision making were introduced after the colony, where the demand for livestock and old world crops changed the production systems significantly. The establishment of *encomiendas*, *repartimientos* and haciendas and political divisions fractured the former systems of vertical control of ecological regions, thus weakening the power of local indigenous elites. During the republican period these changes were reinforced and the exercise of power was re-balanced toward the new ruling class. Nevertheless, this rebalance did not mean better conditions or less labour for indigenous communities. On the contrary, it meant a new and stronger ruling elite and a more exploited indigenous population.

4.3 Visualizing configurations of history and culture in North Potosí

To visualize the effects of history and culture on current existing structures, a number of variables have been considered (See section 3.3.6). This section will present a detailed description of changes in cultural and historic variables in the North Potosí region, over time.

4.3.1 Evaluation of changes in historic variables in North Potosí

For the purpose of this study a set of historic variables were evaluated through literature review and secondary information. Historic variables evaluated in this study include the evolution of organizations, productive patterns and technology in agriculture; sifts in power holding and migration trends (See Table 3.3). Table 4.3 will present a detail of changes in variables over different periods of time.

Table 4.3 North Potosí – Historic trends and changes

PERIOD OF TIME	A. ORGANIZATIONS FOR AGRICULTURE	B. DECISION MAKING (Power Holding in agriculture)	C. PRODUCTIVE PATTERNS, D. TECHNOLOGY AND INNOVATION	E. MIGRATION TRENDS
Pre-Hispanic	Community organization. Leadership in the hands of hereditary ruling elite.	**What to produce?** Crop cycles were discussed by the communities and followed a pre-established trend. **Where to produce?** Cycles of production and rest were discussed by communities. A general pattern was followed but elites influenced decisions **When to produce?** Timing of sowing, agricultural practices and harvest followed a general pre-established trend but was evaluated yearly according to community perspective of natural indicators.	**Technological Innovations** Small scale technological innovations (tools, practices, input) were proposed by families and adopted by the communities. Larger scale innovations were promoted and organized by the state and/or ruling elites. Such innovations include: • Slope modification (Terracing) • Water management (Ponds, sunken fields, canals) • Micro soil management (Planting beds, crop mounds) • Field Boundary walls **Market Innovations** Some barter took place in the form of gift exchange **Institutional Innovations** Establishment of a ruling class that enables vertical control of different ecological regions and organizes major projects. Ayllus as a basic socio-economic organization of kinship and solidarity	Main settlements in the highlands. Seasonal migration to inter-Andean valleys and plots at the edge of rainforest.
Spanish Colonial Rule	**Encomienda and Repartimiento:** Community organization led by a local leader (*Curaca, Mallku, Corregidor*) that responded to the crown appointee **Hacienda** Community that responded directly to the state owner	**What to produce?** Spanish demand on staple and old world crops guided decision making on valley lands and strongly influenced the highlands. **Where to produce?** Spanish influence produced a change in the pattern of usage of different plots of land. Marginal land destined to local crops. **When to produce?** Timing followed a pre-established trend and was made based on natural indicators for local crops. Introduced crops were subject to Spanish guidelines and later adopted by the communities according to local experience	**Technological Innovations** New crops, livestock and large scale production were introduced **Institutional Innovations** Encomienda and Repartimiento were introduced by the Spanish and modified the traditional systems to collect taxation for the Crown. Haciendas modified the traditional Ayllu systems and introduced a form of labour for produce. **Market Innovations** With the fracture of the system of vertical control of ecological regions, trade began initially in the form of barter Markets were established in urban areas and currency introduced	Forced migration of males to work in the mines or other areas Voluntary migration outside communities to become unattached labourers or *yanaconas*
Early Republican Period (Before 1952)	**Ayllus** Community organization led by a local leader that	**What to produce?** Decisions made by Hacienda owners on their land. Indigenous communities followed pre-	**Technological Innovations** Not determined **Institutional Innovations**	Migration outside communities to become unattached labourers or

PERIOD OF TIME	A. ORGANIZATIONS FOR AGRICULTURE	B. DECISION MAKING (Power Holding in agriculture)	C. PRODUCTIVE PATTERNS, D. TECHNOLOGY AND INNOVATION	E. MIGRATION TRENDS
	manages tribute to the state. Leader appointed on the basis of its membership in an elite group and possession of land. **Hacienda** Community that responded directly to the state owner	established rotation cycles and decided collectively. **Where to produce?** Decisions made by Hacienda owners on their land. Indigenous communities followed a cycle of plot usage over time and decided collectively over it. **When to produce** Cycles based on ritual calendars were followed and adjusted with input from natural indicators	*Encomiendas* and *repartimientos* were abolished. Haciendas began expanding throughout the region. **Market Innovations** Growth of the mining sector provided market for local produce Free market brought cheap flour from Chile and Argentina thus destroying local wheat production	*yanaconas* Regional migration produces *agregados* and *cantu-runas* out of people who do not have direct access to land
Late Republican Period (After 1952)	**Ayllus** Community organization led by a local leader appointed by turn from the group of farmers who own land – "originarios" **Sindicato Agrario** Organizations erected on communities that were former haciendas. Appointment of local leaders by turn	**What to produce?** Communities decided collectively on communal land and individually on family plots. **Where to produce?** Followed a pre-established rotation cycle yet community plots were subject to community decisions. **When to produce** Cycles based on ritual calendars were followed and adjusted with input from natural indicators	**Technological Innovations** Not determined **Institutional Innovations** Haciendas were taken over by farmers and Sindicatos Agrarios were established as a form of political organization. Agriculture in former Hacienda land followed the same pattern as the ayllu **Market Innovations** Local fairs still practice barter and gradually currency is used Road construction enhances trade	Seasonal migration to peri-urban and urban areas during the dry season Permanent internal and external migration*

* Source: Personal elaboration based on diverse bibliographical sources

The community organization is a form of organization that persists over time in the North Potosí region. During the Pre-Hispanic period the community evolved to adjust to the different power groups (Tiawanacu, Colla Kingdom, Inca Empire), yet its traits of kinship relations, mutual dependence and second level aggregation persisted. During the Spanish colonial rule it was this same community organization that became the basis for the new arrangements introduced by the Spanish crown (*encomienda, repartimiento*). These tribute collection arrangements were abolished but the community organization persisted as did tribute itself. During the late republican period it was the community organization that served as a political instrument to challenge existing structures, fostering the 1952 revolution. The organization itself persisted and although some modern traits have been incorporated, its essence continues.

Decision making in terms of agricultural production has been a collective experience throughout time. External power holders exercised variable levels of influence in decision making in different periods of time. After 1952 communities regained power over decision making.

The Pre-Hispanic period was a time of highest technological innovations. The period of Spanish rule was characterized by institutional innovation to enable taxation and mining. The early and late republican periods show lower levels of innovation. Main changes in productive patterns took place during the Spanish rule, mainly due to the introduction of new crops and new species of livestock. *Encomiendas, repartimientos* and *haciendas* introduced during this period of time also changed the patterns of production and migration.

Historic variables are strongly related to cultural variables. The following section will present a summary of changes in culture over time.

4.3.2 Evaluation of changes in cultural variables in North Potosí

Cultural variables assessed include type of organization, spoken languages, ethnic origin, religion and traits of collectivism and individualism (See Table 3.3). A quantitative description of organizations as perceived by farmers is presented in Section 6.3 as an evaluation of changes in structure variables. This section will elaborate on the current situation of the different cultural variables considered for this study, based on secondary information collected from national survey data and qualitative information from other studies. Qualitative information collected from participant observation is also included in this section.

Additionally, Table 4.7 will present a summary of changes in cultural variables over different periods of time.

4.3.2.1 North Potosí – Traditional and Productive Organizations

This section will present a summary of the characteristics of the local level organization "the community" and the characteristics of second and third level organizations that aggregate communities.

i. The traditional community organization in Qhayanas – North Potosí

In the North Potosí region there are two main types of organizations that bind communities. In areas where haciendas were established during the Spanish colonial rule and early republican period, after the 1952 revolution communities aggregated into "*Sindicatos Agrarios*". In areas where *encomiendas* and *repartimientos* were established, the traditional Ayllu organization persists. In the Qhayanas region of North Potosí, where one of the study sites is located, the traditional Ayllu organization is still in operation today.

Ayllu Qhayanas is formed by a group of communities. Each community aggregates a group of families in a common territory, the role of the community being to define borders and land for personal or collective use. Community practices are arranged around a festive calendar. The calendar marks specific festivities and farmers associate these festivities with specific practices for agriculture and marketing. Communities have a common geographic place of gathering for ceremonies, festivities, sports interaction, community meetings, commercial exchange and other services. Although some houses may be located close to this place of gathering, others may be well dispersed.

The community organization manages some practices of collective work and manages the use of land on every agricultural cycle. Practices of collective work may include building or maintenance in community areas such as school, meeting place, irrigation or water services and others. The community as a whole identifies the type of work to be done and defines the amount of work needed, when it should be done, and the penalties for not participating. Similarly, the allocation of mantas[92] for cultivation, the crops and/or varieties to be cultivated and the management of grazing land are defined collectively in the community (See Quote 4).

[92] Manta is a denomination given to a plot of land that is locally managed although its production may be responsibility of an individual family or of the community. Mantas are plots located at different

Quote 4. *To decide which mantas will be planted there is a community meeting with the authorities. We talk about what kind of year it will be, what the local indicators say and which mantas have rested longer. (Female of approximately 30 years old, married to a local community member, August 2009)*

While a general definition of community refers to a group of individuals living in the same geographic area, in the highland context of Bolivia a community is the basic unit of social aggregation. The geographic scope of a community is well defined and people living in it are formally and mandatorily registered in the social organization. There is generally an ethnic commonality between members of a community in highland regions. People share common values, beliefs and cultural practices, although there are also differences in religious filiation and political views. Inside the community each family has rights and obligations. These rights and obligations stem around access to services and community work but include also being an authority. Farmers (male) are included in the community list when they are married. This marks their inclusion in public life, being eligible for public office as part of the community. Office is traditionally held by males and females.

Community leaders and representatives in communities of Ayllu Qhayanas are appointed through a combined process of election and turn. The "turn" or rotation is a principle that emphasizes equality, giving all community members a chance to serve as an authority. The definition of when each family will receive this chance is done through election and deliberation in community meetings. Community authorities change every year during the Christmas council and represent the community in the higher level organization that aggregates communities into an Ayllu. Community meetings are usually held monthly on a fixed date but there are also extraordinary meeting defined in the community assembly depending on the need.

The maximum authority in a community is held by the "Jilaqata"[93] and the "Mama T'alla"[94]. They represent the duality of male and female "chacha-warmi"[95]. In the Qhayanas region

---

altitude levels along one or several hillsides. A crop rotation cycle is associated with a manta where specific crops are produced for two or three years, later leaving a fallow period of approximately 7 to 10 years. The crops produced and the time of rest depends on the altitudinal location of the plot (its productive aptitude) and local decisions.

[93] The word Jilaqata is formed of two Aymara words: jila meaning older brother and qata meaning outstanding. CHOQUE CAPUMA, E. 2004. *Las prácticas de poder y liderazgo de los Jilaqatas y Mama tállas en Huachacalla Marka.* MSc en Educación Intercultural y Bilingüe, Gestión y Planificación, Universidad Mayor de San Simón.

[94] It is the name given to the female role of authority. The Mama t'alla completes the dual nature of leadership. It is a figure of influence over the authority of the male.

being an authority is a form of service to the community. The objective of this service is to maintain harmony in the community and to represent the community outside its boundaries. The maintenance of harmony is the essential political ideology of community leaders and it is expressed through ancient practices of redistribution of goods and services. These practices include management of *mantas* and *ayni*[96]. The role of representation is exercised in second and third level organizations (Se section below) and with different institutions from the public sector.

ii. Qhayanas as part of second and third level organizations in North Potosí

Ayllu Qhayanas is part of the former territory of the Qhara Qhara – Charka confederation (Platt et al., 2006). The Qhara Qhara – Charka territory is formed by two big geographic units that hold the same names. The Charka unit includes two partialities called *Manqhasaya* in Aymara or *Urinsaya* in Quechua, meaning a lower location in terms of altitude (valley); and Alaxsaya in Aymara or Patasaya in Quechua, meaning higher location (puna). Ayllu Qhayanas is a Major Ayllu located in the Patasaya partiality of the Charka unit. Qhayanas itself holds 7 Minor Ayllus (Quwi Khari, Chiru, Takawani, Jach'a Palli Palli, Jisk'a Jila, Sirqui y Jach'a Jila) all located in the Patasaya partiality. (Mendoza T. and Patzi G., 1997) Communities, according to their location, aggregate into Minor Ayllus as second level organization; and Minor Ayllus aggregate into Major Ayllus as a third level organization.

FAOI-NP[97], today known as "Native Ayllus of the Charka-Qhara Qhara Suyus[98]" was founded in 1993. It represents the Charka and Qhara Qhara native nations and groups 40 Ayllus in the North Potosí region. Ayllu Qhayanas aggregates 7 Minor Ayllus that are part of the 40 Ayllus that belong to FAOI-NP.

---

[95] Translated as Male-Female, it reflects the binding of the married couple in a unit of values and behaviour, with rights and duties to the community. It is a unit that represents the complementarity and equilibrium of opposites. LUGONES, M. 2009. Hacia una lectura decolonial de chacha-warmi. Repensando el mestizaje: XIII Reunión Anual de Etnología.

[96] It is a practice of collaborative labour. The main understanding is that on person provides support in exchange for support given by others.

[97] Spanish acronym for Federation of Native Indigenous Ayllus of North Potosí. This denomination is currently being changed to Native Ayllus of the Charka – Qhara Qhara Suyus in order to reflect its common history. The name will be officialized once its statute is approved.

[98] Quechua word that can be translated as partiality or region.

iii. Productive organizations in Qhayanas – North Potosí

Traditional organizations in North Potosí are focused on political claims and the reconstruction of native organizational structures. In this process they have progressed considerably through the establishment of FAOI-NP and the inclusion of its members in public spaces for decision making. Nevertheless, Ayllus and communities have had little interaction with technology innovation processes for both production and marketing. In the light of this gap external institutions have fostered the creation of farmer organizations to promote and enhance technology innovation for agricultural production and market linkages. One of these newly created organizations is the Association of Organic Agricultural Producers from Qhayanas APROAQ[99].

APROAQ aggregates farmers from different communities in Ayllu Qhayanas who want to work with new technological innovations for agricultural production and ultimately link with the market. Its work focuses on a wide diversity of potatoes, promoting enhanced production practices and collective market involvement.

4.3.2.2 North Potosí – Spoken Languages

The main spoken language in North Potosí and Ayllu Qhayanas is Quechua, yet due to the proximity of Aymara speaking Ayllus and communities many families and individuals can speak both languages. Spanish is the secondary language in the region. The younger generations manage both Quechua and Aymara. It is related to literacy and exposure to the outside world. It is usually women and the elderly who do not speak Spanish.

Table 4.4 Main languages spoken in the municipality of San Pedro de Buena Vista

Main language spoken	Population	% of population
Quechua	22.144	91,78
Aymara	1.345	5,57
Spanish	509	2,11
Foreign	1	0.00

Source: INSTITUTO NACIONAL DE ESTADÍSTICA 2005. Atlas estadistico de municipios 2005, La Paz, INE.

presents national survey information on the main language spoken in the Municipality of San Pedro de Buena Vista, where Ayllu Qhayanas is located. According to these data Quechua is the main language spoken in the region.

[99] Spanish Acronym for Asociación de Productores Orgánicos Agropecuarios de Qhayanas

Table 4.4 Main languages spoken in the municipality of San Pedro de Buena Vista

Main language spoken	Population	% of population
Quechua	22.144	91,78
Aymara	1.345	5,57
Spanish	509	2,11
Foreign	1	0.00

Source: INSTITUTO NACIONAL DE ESTADÍSTICA 2005. Atlas estadistico de municipios 2005, La Paz, INE.

4.3.2.3 North Potosí – Ethnic Origin by self determination

Although in Bolivia there is a relation between ethnicity and language, there are other determinants that affect ethnic self-determination. Indigenous identification in Bolivia is shaped by socio-economic, demographic and political factors (Madrid, 2006). Social movements in the highlands have focused on the reconstruction of Ayllus and past social structures (Albó, 2008), thus stimulating a process of revaluation of ethnicity. Data from the national survey presented in Table 4.5 show that 100% of the population in the municipality of San Pedro de Buena Vista identifies themselves as indigenous with 86.5% of them self-determined as belonging to the Quechua ethnic group.

Table 4.5 Ethnic origin by self-determination in the municipality of San Pedro de Buena Vista

Ethnic origin by self determination	Population	% of population
Native Quechua	13.861	86,46
Native Aymara	1.201	7,49
Native Guaraní	960	5,99
Guaraní	4	0,02[1]

[1] Source: INSTITUTO NACIONAL DE ESTADÍSTICA 2005. *Atlas estadístico de municipios 2005,* La Paz, INE.

4.3.2.4 North Potosí – Religion

Religious practices in the North Potosí region are essentially a syncretism of Catholicism with elements of ancient practices derived from embodiment and objectification of nature. Spanish colonization had strong emphasis on religious indoctrination to the catholic faith, thus some elements of local practices were incorporated in the catholic practices. In the last 20 years, there has been increasing action of different NGOs and missionary groups in North Potosí to promote Christianity from different protestant branches and support development processes. At present approximately 1/3 of the surveyed population reports a Christian protestant

affiliation while the remaining 2/3 reports a Catholic affiliation. Table 4.6 presents a detail of the religious affiliation manifested by the surveyed population.

Table 4.6 Reported religious affiliation among surveyed families in Ayllu Qhayanas

Religions affiliation	2008		2011	
	Frequency	%	Frequency	%
Catholic	44	65.7%	39	63.9%
Christian Protestant	23	34.3%	22	36.1%
Other	0	0.0%	0	0.0%
Total	67	100.0%	61	100.0%

Source: Own elaboration based on survey data sets

An important element to be highlighted when analysing the information on religion is the effects of religious practices on local cultural manifestations. Catholic affiliation is reported by the majority of the population mainly due to the syncretism that this religious identification has had with traditional local practices and with the festive tradition. Many festivities are associated with saints and religious holy days while at the same time including practices of thanksgiving to *Pachamama* or mother earth. Practices of ritualistic blessing or thanksgiving to the land and material goods, communal festive practices and other similar manifestations of ancient traditions are overseen by Catholicism and in some cases have become included in the rituals of the church. Christian protestant affiliation on the other hand confronts these practices. Farmers are compelled to avoid festive events, mainly due to the high alcohol consumption it traditionally includes. Other rituals and practices such as coca leaf chewing or *acullico*[101], future telling and predictions through coca reading, animal sacrifices, folk dances, thanksgiving and blessings to nature and other similar manifestations have also been questioned by Christian protestant groups.

The differences between Catholics and Christian Protestants, in terms of the acceptance of local collective practices, have created a separation of the community. Christian protestant farmers avoid festivities and other community gatherings, and are therefore observed negatively by the community.

> ***Quote 5.*** *I am working well with PRODII I have planted this grass on the borders or my terrace and my animals have more food now. The community observes my work though, they talk about me, it's because I don't go to drink with them, and I don't host parties. I am a Christian you know… (Male farmer from Qhayanas approximately 30 years old, December 2010)*

[101] It is the name given in Aymara language to the process of consumption of coca leafs. It is not a complete consumption since leafs are not swallowed only slightly chewed to extract the juice.

Whether intentionally or unintentionally, some of the Christian Protestant practices are reinforcing individual values and discouraging traditional cultural collectivistic practices.

4.3.2.5 North Potosí – Traits of individualism and collectivism

In North Potosí and Qhayanas region, farmers live immersed in their primary groups, family and community. The organization of work, entertainment, religious practices and other activities are directly related to these primary groups. Even individual actions reflect group perceptions. Quote 6 reflects on a farmer who joined in the new farmer organization for production and marketing, due to influence from others and to avoid conflict.

> ***Quote 6.*** *I am a member of the organization now. At the beginning when PRODII started working only a few were members but now most of the community is. If we see it is working, than we all want to participate. We have to be together, we are a community. If only a few are members than it is a problem, others will envy. (Male farmer from Qhayanas approximately 50 years old, February 2010)*

In the same way, a younger farmer expressed how the first members of the new community organization felt affected by the community's observation of his work in the group.

> ***Quote 7.*** *In the community festivity people were speaking badly about me because I was a member of APROAQ. We are not restricting them from joining (with apologetic expression); one will join depending on their time. We (the members) said this to the community. Now others have also joined. We are working well with PRODII and we want to produce more to support our families. If others want they can do it too. (Male farmer from Qhayanas approximately 30 years old, August 2009)*

Collective practices in the Qhayanas region are a common pattern. One of the ways in which individualism is expressed, is observation and questioning of other community members as mentioned in the quotes above.

Table 4.7 North Potosí - Cultural Patterns in time

Period of time	A. Type of organization	B. Languages spoken	C. Ethnic origin	D. Religion	E. Individualism /collectivism
Pre-Hispanic	Community organization led by local elites that guide main technological issues.	**Pukina** during the Tiwanaku civilization **Aymara** during the Colla Kingdom **Quechua** during the Inca Empire	**Pukina** during the Tiwanaku civilization **Aymara** during the Colla Kingdom Predominant **Aymara** with some **Quechua** influence during the Inca Empire	Embodiment and objectification of nature. Duality. Little evidence of Inca worship during the Inca Empire	Collectivist society
Spanish Colonial Rule	Community organization led by local elites for the collection of tribute	**Quechua** is the main language **Spanish** is used only by the elites	Aymara and Quechua mixed background.	Embodiment and objectification of nature and duality with some elements of the Catholic faith	Collectivist society
Early Republican Period (Before 1952)	Community organization led by local elites for the collection of tribute	**Quechua** is the main language **Spanish** is used only by the elites	Aymara and Quechua mixed background	Catholic syncretism with elements of nature embodiment, objectification and duality	Collectivist society
Late Republican Period (After 1952)	Community organization driven by political claims	**Quechua** is the main language **Spanish** is learnt in school and used outside communities	Aymara and Quechua mixed background.	Catholic syncretism; Protestantism in the last two decades	Collectivistic society with individualistic elements from recent religious affiliation and market practices

Source: Personal elaboration based on diverse bibliographical sources

A general overview of historic and cultural variables in North Potosí and the Qhayanas region shows a trend towards collectivistic practices and structures with a continuous reiteration of community structures with different functions over time. Likewise power has been concentrated strongly on external actors and partially in elites. Cultural manifestations reinforce collectivistic practices creating a trend where reiteration is fostered and incorporated in new processes. Such is the case of Catholic syncretism that currently includes ancient local practices that reinforce collective values.

4.4 History and Evolution of Agricultural Systems in Chaco

To comprehend the establishment, development and evolution of agricultural systems in Chaco, it is important to visualize the ecological and natural environment and the worldview of inhabitants throughout different periods of time. The combination of the natural environment and the worldview of the population and their social characteristics will shape and reshape

agrarian systems throughout time. This section, as did the former one with North Potosí, will present a general description of the natural environment, the evolution of worldviews and the following changes in society and production patterns of agriculture in the Chaco region.

4.4.1 The natural environment in the Chaco region

The Chaco region also called "Chaco Boreal". It stretches through southern Bolivia and western Paraguay, from the last foothills in the south-eastern slopes of "Cordillera Real" up to the borders of the Amazon rainforest situated further east, limited southward by the Pilcomayo river (Cleaver, 2004). The Chaco region comprises wooden plains and jungle with an average altitude of 300 m.; with little slope variation yet presenting some low mountain hills and land depressions that produce marshes. Due to its continental location and to seasonal wind regimes especially from Antarctica, there are day/night thermic variations as well as marked seasonal variations in temperature. Rainfall is unevenly distributed with least concentration during the winter, yet highly influenced by "El Niño and la Niña" southern oscillations.

One of the study sites is located in the municipality of Yacuiba, province Gran Chaco of Tarija (See Figure 4.1). Further description of current local production and technology can be found in Section 3.7.3.

4.4.2 Society and worldview in the Chaco region

The first settlers of the Chaco region were the Guaraní[102], Ava or Chiriguano and the Mataco[103] people. These groups shared a common perception of men and nature. For the first settlers man was part of nature, where souls of humans and animals influence each other reciprocally (Meggers, 2010). As an integral part of nature, man must maintain an adaptive relation with the environment (Meggers, 1999) where culture and natural selection play an important shaping role.

The Matacos, Wichí or Weenhayek were highly adapted to their environment, making simple temporary dwellings out of local materials. Agriculture was very limited due to the dryness of the land. Land is a common property where each family has a small plot that they hold as long

[102] The Guarani ethnic group is classified as being part of the Andean-Equatorial, Equatorial, Tupi family through their linguistic classification

[103] The Mataco ethnic group is classified as being part of the mataco-guaycurú linguistic family and the mataco-mataguayo sub-family. The name Mataco refers to a specific type of armadillo living in the region, and is a pejorative name given to the Wichí or Weenhayek ethnic group by the Quechuas. Never the less, the linguistic classification has used this denomination with no pejorative meaning.

as they cultivate it. The main subsistence product is fishing, hunting on a lesser scale, some gathering of wild plants and fruits such as locust bean[104], chanar[105], tusca[106] and others; and cultivation of maize, manioc, beans, watermelon and squash (Mashnshnek, 1978). The production of maize and manioc was limited and thus in great proportion accessed through barter with the Ava or Guaraní, this process having the character of an exchange of presents. By the beginning of the 20th century and due to contact with colonizing migrants some Matacos kept goat and sheep on a very limited scale, but no cattle were raised (Karsten, 1932).

The social organization of the Matacos is characterised by a community of fairly loose social structure of families related to one another by blood. Each community has a ruler or chief and a group of communities will have a great chief. These rulers only have a role in representation of the community before outsiders (Lema, 2001), enjoying social prestige and esteem, yet no real power is exercised in terms of decision making regarding the community or the families. A social feature characteristic of the Mataco and other Chaco groups is the matriarchy that prevails among them. Lineage and community belonging is usually traced through the mother's side. In the same sense, females are held in high esteem and decisions within the household are made by wife and husband collectively. Many Mataco folk stories speak of the origin of woman as coming from inside the earth just as the earth gives birth to life (Metraux, 1982), or flying from the sky and being captured to marry men (Del Campana, 1982, Fock, 1982). In general men are responsible for fishing and hunting activities and women have a major saying in agriculture, although plots are maintained by the family as a whole.

A type of socialism has been said to exist amongst the Mataco and other indigenous groups of the Chaco region. This solidarity and social sympathy is visualized by some researchers as a natural outcome of evolution under the specific environmental characteristics of the Chaco region (Karsten, 1932). According to Karsten, the sympathy and solidarity traits of society follow the Darwinian law that in harsh conditions such societies have the best chance to survive. In addition to the above, by the end of the 20th century, specific traits such as full liberty, respect for private property and honesty, were in full use thus having no need for any form of justice or judgement. Excess and violence takes place only in festive occasions due to the influence of alcohol; in this case women are in charge of preventing violence and the aggressors are usually exiled or expelled for some time until the issue is settled.

[104] *Prosopis sp.*
[105] *Greoffroea decorticans*
[106] *Acacia macracantha*

In the late 16th century due to pressure and invasion from the Ava-Guaraní people, the Matacos and their own demographic growth, they moved towards the south-eastern Chaco region in Bolivia.

The **Guaraní, Ava or Chiriguano** is the main ethnic group in the Bolivian Chaco. Their dwellings were semi-permanent and were made out of local forest materials. Their subsistence was based on hunting, gathering (wild plants and fruits) and agriculture (maize, manioc, watermelon, squash). Land for agriculture was a private holding of families yet it was legitimated by belonging to kinship to an extended family group. Sharing the same environment as the Matacos, most productive initiatives had a similar character, with a stronger specialization in maize cultivation, given their contact with the Quechuas along the Inca frontier.

The basic social organization of the Guaraní is the monogamous family. Families are aggregated in larger groups of extended family clans bonded by kinship. It is this kinship of families in the community that enables access to resources. Communities are ruled by a chief leader that represents the community while holding influence in the collective decision making processes. Groups of communities or extended families are aggregated in second level organizations with a common leader. The leadership importance within the Guaraní groups, seem to have been influenced by the Quechua contacts on the north-western frontier. Evidence of this influence can be perceived in the word Cacique commonly used by Quechuas to denote local privileged leaders. Although monogamy is a common trait in Guaraní families, some Caciques given their power, were known to have several wives living in different communities (Karsten, 1932). Thus the importance of women in decision making processes is vital in agriculture yet greatly reduced in comparison to that of Mataco women.

The organization based on clans of kinship made cooperation and solidarity a common trait of the Guaraní society. Trade originally took place in the form of barter with other clans or indigenous groups.

4.4.3 Agrarian Systems in the Chaco region

Before the arrival of the Spanish, Guaraní people lived in clans that organized collectively their subsistence activities. Although they had semi-permanent settlements, migration was also common. Families depended on the extension of terrain held by the clan for hunting and gathering, as agriculture was limited.

The arrival of the Spanish caused frequent migration trends away from coastal regions and into the heart of the Chaco region. Although these migrations implied processes of adaptation to the new environment, their social structure remained untouched and enabled them to adjust.

The presence of colonizing settlements increased in the Chaco region after 1880. These settlements provoked violent struggles between colonizing and indigenous groups that took place iteratively until 1892 (See section 4.1.2.4 sub section i) with an open war (Combes, 1991) that ended with the defeat and death of thousands of Guaranís, Chanés, Tobas and Weenhayeks. Some communities survived although facing large reductions in their land. This colonization process was further carried out after the Chaco war and implied large concessions of land after the 1952 revolution (Lewis and Mosse, 2006). Currently most of the population has a mixed background from local indigenous population and colonizing migrants of Caucasian and Andean origin. There are also specific settlements of Andean migrants, Mennonites and large landholders of European descent. The main changes in terms of agriculture is a shift from a system of hunting, gathering and agriculture, to a modern market-oriented system of staple crops and livestock production for small, medium and large landholders.

Changes in the agricultural system brought in by colonization implied a strong shift in productive patterns, technology and decision making. Before the establishment of Catholic missions, haciendas and private states in the Chaco region, agricultural systems were based on hunting, gathering and maize production; decisions regarding agricultural production relied entirely on the family. With the establishment of haciendas during the colonial and early republican periods, and land concessions during the late republican period (Fernandez, 2003), agricultural systems shifted radically towards cattle production and decision making moved to the hands of the elite of landowners. Native families were pushed out of their land or in some cases were included as *peones*[107] in their own land.

The agrarian reform that marked the beginning of the late republican period (See section 4.1.2.4 sub section ii) strengthened the displacement of indigenous peoples from the lowlands. It established a categorization of land for the Chaco region, where a small property had an extension of 80 ha, a medium size property had 600 ha, and a company could have anywhere between 2000 ha and 50000 ha (Government of Bolivia, 1953). In this regard the 1952 land reform that redistributed land in the highlands to indigenous communities and local farmers

[107] A Spanish word literally translated as pawn or farmhand.

had an antagonistic effect in the lowlands, strengthening and legalizing the access to land by big landowners.

The inequalities in land distribution produced the mobilization of large groups of people with no means for subsistence. In 2000 a group of peasants settled peacefully with their families in an abandoned state called Pananti[108]. This was the beginning of the Landless Movement MST[109]. The MST was formed by people of mixed ethnic background, generally migrants from valleys who sought to access by force that which could not be accessed otherwise. Peasants present in the movement can be classified in four different types (Cortéz, 2003):

- Peasants who never had access to land
- Smallholding farmers from unproductive regions and who had to abandon their land
- Farmers who were not able to inherit land from their parents due to smallholding
- Farmers who lost their land (credit, mortgage).

The morning of November 9th, 2001 a confrontation took place between landless farmers and groups organized by power holders (Miranda, 2002). Gunmen paid by landowners assaulted Pananti settlers killing 7 people and wounding other 19 (Hinojosa et al., 2001). This event that came to be known as the "Massacre of Pananti" was a turning point for the Landless Movement. The harsh circumstances that landless farmers went through during and after the massacre, with the militarization of the land in Pananti and the mobilization of local elites, strengthened the movement (Miranda, 2002). Today the former landless settlers of Pananti are permanently established in the land and have formed a community. The community of Pananti is one of the four communities from Yacuiba that are included in this study. The other three communities are older smallholder communities, yet productive practices have permeated Pananti thus giving all four similar production patterns.

4.5 Visualizing configurations of history and culture in Yacuiba

To visualize the effects of history and culture on current existing structures, a number of variables have been considered (See section 3.3.6). This section will present a detailed description of changes in cultural and historic variables in the Chaco region, over time.

[108] Pananti is a community considered for this study, located near Yacuiba. This community was included in both the technology innovation Project and the participatory initiative.
[109] Spanish acronym for Movimiento Sin Tierra. It is a social organization of people who demand access tol and.

4.5.1 Evaluation of changes in historic variables in Yacuiba

Historic variables evaluated include the evolution of organizations, productive patterns and technology in agriculture; shifts in power holding and migration trends (See Table 3.3). Table 4.8 will present a detail of changes in variables over different periods of time.

Table 4.8 Yacuiba - Historic trends and changes

PERIOD OF TIME	F. ORGANIZATIONS FOR AGRICULTURE	G. DECISION MAKING (Power Holding in agriculture)	H. PRODUCTIVE PATTERNS, I. TECHNOLOGY AND INNOVATION	J. MIGRATION TRENDS
Pre-Hispanic	Loosely bound community	**What to produce?** Crops were produced on family plots and decided by families **Where to produce?** Family decision shared with the community **When to produce?** Timing of sowing, agricultural practices and harvest followed a general pre-established trend but were influenced by individual family decision making.	**Technological Innovations** Small scale technological innovations (tools, practices, input) were developed by families **Institutional Innovations** Communities were formed by kinship relations and were aggregated clusters by group leaders **Market Innovations** Barter took place in the form of gift exchange between different lowland groups.	Immigration from what is today Paraguay and Brazil into Bolivia due to demographic growth and pressure from other groups from the lowlands. Migration of Quechuas from the highlands on to the edge of the rainforest produced constant clashes with the Guaraní from the lowlands.
Spanish Colonial Rule	Loosely bound communities	**What to produce?** Crops decided by families on individual family plots **Where to produce?** Family decision shared with the community **When to produce?** Timing of agricultural practices followed general trends but was ultimately defined by the family	**Technological Innovations** New crops and livestock are introduced by Spanish missionaries **Market Innovations** Some trade with Spanish settlements begins	Spanish missions and settlements flow toward the Chaco region to establish cattle producing states. With pressure over land indigenous people migrate towards less productive areas
Early Republican Period (Before 1952)	Loosely bound communities	**What to produce?** Family decision for smallholders and landowner in medium and large states **Where and when to produce?** Family decision for smallholders and landowner in medium and large states	**Technological Innovations** Extensive cattle production expands **Institutional Innovations** Colonization emplaces haciendas and large estates pushing native communities away from their land **Market Innovations** Small towns produce market opportunities	Pressure from cattle producing states pushes indigenous communities towards less productive areas. Those who stay are considered part of the grant of land conferred by the state.

PERIOD OF TIME	F. ORGANIZATIONS FOR AGRICULTURE	G. DECISION MAKING (Power Holding in agriculture)	H. PRODUCTIVE PATTERNS, I. TECHNOLOGY AND INNOVATION	J. MIGRATION TRENDS
Late Republican Period (After 1952)	Loosely bound communities	**What to produce?** Family decision for smallholders and landowner in medium and large states. Decisions influenced by the market **Where and when to produce?** Family decision for smallholders and landowner in medium and large states	**Technological Innovations** Large scale production of staple crops is fostered by landowners. Technology is introduce for extensive production **Institutional Innovations** Large concessions of land by the state and colonization increase private property. Indigenous people are included as labour or further displaced **Market Innovations** Road constructions to Santa Cruz and Tarija enhance trade. Large market development	During the Chaco war many Guaraní indigenous people die, others migrate towards Paraguay and some to Argentina. Immigration from the highlands increases and colonization spreads. The government promotes external migration and Germans from the Mennonite ethnic-religious group establish in the lowlands.

Source: Personal elaboration based on diverse bibliographical sources

4.5.2 Evaluation of changes in cultural variables in Yacuiba

Cultural variables considered for the analysis of empowerment include type of organization, spoken languages, ethnic origin, religion and traits of collectivism and individualism (See Table 3.3). A quantitative description of organizations as it is perceived by farmers is presented in Section 6.3, as an evaluation of changes in structure variables at the collective level. This section will elaborate on the current situation of the different cultural variables considered for this study, based on secondary information collected from national survey data and qualitative information from other studies. Qualitative information collected from participant observation is also included in this section. Additionally, Table 4.12 will present a summary of changes in cultural variables over different periods of time.

4.5.2.1 Yacuiba – Traditional and Productive Organizations

This section will present a summary of the characteristics of the local level organization "the community" and the characteristics of other organizations present in the region.

i. The traditional community organization in Yacuiba – Chaco

The geographic scope of a community is well defined and people living in it are formally and mandatorily registered in the social organization. There is generally an ethnic commonality between members of a community in highland regions. People share common values and beliefs, although there are also differences in religious filiation and political views. Inside the community each family has rights and obligations. These rights and obligations stem around access to services and community work but include also being an authority. Farmers (male) are included in the community list when they are married. This marks their inclusion in public life, being eligible for public office as part of the community. Office is traditionally held by males and females.

A community in the Chaco region is formed by a group of families that share a common geographic area. Ethnic commonality is a trait that may difference some communities from others but there are also communities of mixed background with members from different ethnic groups. In some communities where ethnicity is a strong common trait, people also share values and cultural practices. In mixed background communities the most important common trait is geographic location. It is only in case of emergency or need that families

aggregate to act together. There are three types of organizations that operate in the Chaco region today.

- Traditional indigenous communities established by native Guaraní peoples. These communities have a leader that acts only as a representative of the community.
- Territorial Base Organizations OTB[110], a form of organization introduced by the Popular Participation Law[111] that aggregates families living on a common geographic area in order for them to access, control and define the destination of municipal funds (Government of Bolivia, 1994) assigned to the area. This organization is the most common one in traditional mixed-background communities in Chaco
- *Sindicato Agrario*, a type of organization created after 1952. It has a political emancipatory character and is usually present in newly formed communities, particularly in those that emerged out of the settlement of landless farmers on former states.

In Yacuiba the communities considered for this study belonged to the last two categories. There are traditional mixed-background communities who operated only through the OTB to access municipal funds, and *Sindicato Agrario* that meets on a periodical basis to deal with projects and other initiatives that affect the community. An important element to take into consideration is the influence of migrants from the highlands on organizational culture and patterns over both traditional mixed-background communities and newly formed communities. There is a gradual shift towards the establishment of *Sindicatos Agrarios*, mainly due to the influence of Quechua migrants that come from areas where the 1952 revolution produced big changes in terms of land tenure and rights (See section 4.1.2.4 sub section ii).

The decisions on agriculture in terms of what, when and where to produce rely entirely on the family (See Quote 8), although the patterns of production are influenced by the community.

> ***Quote 8.*** *I produced groundnuts this year more than maize, I have rented some land too. Maybe we will do the same next year. It depends on the price. Not everyone produces groundnuts in the community, others who have larger land have cattle. It depends on you what you produce. September 2009)*

[110] Spanish acronym for Organización Territorial de Base
[111] From the Spanish "Ley de Participación Popular", law 1551 enacted on April 20th, 1993.

ii. Second and third level organizations in Yacuiba - Chaco

The three types of organizations existent in Yacuiba are to some degree linked to second or third level organizations.

- Traditional indigenous community organizations are linked to the Assembly of the Guaraní People that aggregates all communities of Guaraní origin. The assembly itself as a representation of the Guaraní Nation is linked to the Confederation of Indigenous Peoples of Bolivia – CIDOB, which groups 34 indigenous groups from the lowlands.
- OTBs due to their territorial nature and instrumental function within the Popular Participation Law are not directly related or linked with other organizations.
- *Sindicato Agrario* has emerged as a new form of organizations and links communities at the regional, departmental and national levels. Communities that are organized through a *Sindicato Agrario* are affiliated to the Trade Union Federation of Peasant Workers from Tarija (FSUTCT)[112] and in turn to the Bolivian Trade Union Federation of Peasant Workers (FSUTCB)[113]

iii. Productive organizations in Yacuiba - Chaco

OTB organizations in the Chaco region deal mainly with allocation and control of municipal resources in their communities. Sindicatos Agrarios on the other hand deal mainly with political claims. Nevertheless, both types of organizations have limited influence on technology innovation, production and marketing. In general, innovation processes are fostered by individuals, associated individuals or by development institutions. Different producer organizations emerge and subside depending on the benefit they provide to farmers. A detail of patterns of affiliation to productive organizations is presented in Section 6.2.1

4.5.2.2 Yacuiba – Spoken Languages

The main spoken language in Yacuiba is Spanish yet in newly formed communities such as Pananti there are groups of people who have migrated from the highlands, and whose native language is Quechua. Additionally there are people who speak Guaraní but don't report it to be their mother tongue. Most Guaraní-speaking communities have been pushed away from

[112] Spanish acronym for "Federación Sindical Única de Trabajadores Campesinos de Tarija", which aggregates representatives of Sindicatos Agrarios from the Department of Tarija.
[113] Spanish acronym for "Federación Sindical Única de Trabajadores Campesinos de Bolivia", which aggregates representatives of Sindicatos Agrarios from all over the country.

this particular geographic area and those who report speaking Guaraní usually have a Guaraní mixed background. Table 4.9 presents national survey information on the main language spoken in the Municipality of Yacuiba.

Table 4.9 Main languages spoken in the municipality of Yacuiba

Main language spoken	Population	% of population
Spanish	61.825	83,55
Quechua	8.820	11,92
Aymara	1.425	1,93
Guaraní	0	0,00
Foreign	825	1,11*

* Source: INSTITUTO NACIONAL DE ESTADÍSTICA 2005. *Atlas estadístico de municipios 2005,* La Paz, INE.

4.5.2.3 Yacuiba – Ethnic Origin by self determination

In the lowlands and the Chaco region social organizations like the OTBs have focused on access to development resources from municipal and regional governments. Some other organizations such as the newly formed Sindicatos Agrarios and the traditional native community organizations have focused on political claims and access to land. This has created a confrontation of views regarding ethnicity in the Chaco region and in Yacuiba in particular. In traditional smallholder communities "Chaqueños"[115] claim not to be indigenous and despise migrants from the highlands, despite the fact that they hold a mixed-background that may hold Guaraní, Aymara and/or Quechua ancestry like the former (Quote 9). In newly formed communities where there are higher numbers of migrants from the highlands, the support of the current government to indigenous movements has fostered their self-identification as indigenous based on political grounds, despite the fact that they may as well have the same mixed background as traditional chaqueños.

> ***Quote 9.*** *While I complimented his abilities on cooking an asado[116]… "We Chaqueños know everything you need to know about cooking meat. It's in our blood, we are born with it". When asked whether he was born in Chaco or if he was from elsewhere "…yes, I was born here but I do have some family in Chuquisaca and my sister lives in La Paz but I haven't seen her for some time. I think my grandmother was from Chuquisaca but we only speak Spanish (a male Chaqueño, approximately 28 years old, August 2008)*

[115] Name given to a traditional mestizo or mixed-background individual established in the Chaco región.
[116] An asado is a traditional barbecue cooked on wood fire where fire is arranged around big pieces of meat placed on a grill, rather than under the meat.

Data from the national survey presented in Table 4.5 shows that over 28% of the population identifies themselves as belonging to a native indigenous group, while less than 14% speak a native language. The native group with the highest population is the Quechua with up to 20.32% of the population in the municipality identifying themselves as belonging to this group. This has much to do with the high migration flows from the highlands in recent years (See section 3.7.3 on migration trends)

Table 4.10 Ethnic origin by self-determination in the municipality of Yacuiba

Ethnic origin by self determination	Population	% of population
None	34.368	69,07
Native Quechua	10.111	20,32
Native Aymara	2.374	4,77
Native Guaraní	1.642	3,30[*]

[*] Source: INSTITUTO NACIONAL DE ESTADÍSTICA 2005. *Atlas estadístico de municipios 2005,* La Paz, INE.

4.5.2.4 Yacuiba – Religion

The early settlers of the Chaco region believed in a close relationship between nature and humans. They assigned human characteristics to natural phenomena, places and animals, practising rituals of respect and thanksgiving. The Spanish colonization and the republic brought in Catholic missions to the region. For over two centuries the presence of missions sought to Christianize the Chaco population. This is reflected in the high percentage of the surveyed population that today identifies themselves with the Catholic (83.3%) and Christian Protestant (13%) faiths. Table 4.11 presents a detail of the religious affiliation manifested by the surveyed population.

Table 4.11 Reported religious affiliation among surveyed families in Yacuiba

Religious affiliation	2008		2011	
	Frequency	%	Frequency	%
Catholic	35	89.7%	45	83.3%
Protestant	4	10.3%	7	13.0%
Other	0	0.0%	2	3.7%
Total	39	100.0%	54	100.0%

Source: Own elaboration based on survey data sets

4.5.2.5 Yacuiba – Traits of individualism and collectivism

In the Chaco region and particularly in Yacuiba, farmers are independent. Productive and market initiatives are defined by every family independently. Most productive patterns in the community are defined by individual choices and influenced by market opportunities (See Quote 10).

> ***Quote 10.*** *I became a member of ASOPROMANI just recently because they said the members would have access to equipment for groundnut production and also because in the group you can negotiate better the price of groundnuts. When you are alone, the intermediary comes to your plot and gives you a low price. You have to accept because otherwise you will not be able to take your entire product to the market by yourself (Male groundnuts producer, approximately 45 years old)*

Community organizations are instrumental and their value lies in the possibility of accessing development and market benefits.

Table 4.12 Yacuiba - Cultural Patterns in time

Period of time	F. Type of organization	G. Languages spoken	H. Ethnic origin	I. Religion	J. Individualism /collectivism
Pre-Hispanic	Community organization bound by kinship. Leaders with no real power are elected for oral representation	Guaraní	Tupi-Guaraní	Embodiment and objectification of nature	Individualistic society
Spanish Colonial Rule	Community organization with leaders that guide resistance against the foreigners	Guaraní in communities Spanish in settlements, haciendas and missions	Guaraní in communities Mixed-background in settlements	Embodiment and objectification of nature. Shamanism Introduction of the Catholic faith	Individualistic society
Early Republican Period (Before 1952)	Community organization. Emergence of spiritual leaders	Guaraní in native communities Spanish in settlements, haciendas and missions	Guaraní in native communities Mixed background in settlements	Fewer traits of embodiment and objectification of nature. Catholic faith in settlements	Individualistic society
Late Republican Period (After 1952)	Few native communities Loosely bound communities of smallholders	Spanish is the main language Guaraní is spoken only in native communities	Predominantly mixed-background Some Quechua due to migration	Predominantly Catholic with a smaller proportion of Christian Protestants	Individualistic society

Source: Personal elaboration based on diverse bibliographical sources

A general overview of the historic and cultural variables in Chaco and Yacuiba shows a persistence of individualism that originates with the Guaraní philosophy of "iyambae" or man with no owner and its tradition of leaders with no real power. This philosophy guided most of

the struggles against foreigners. It led the rebellion and continuous struggle against the Inca incursion in their territory, as it fostered continuous uprising against Spanish missions and settlements, and later insurrection against the state, its land grants, its authority and its structures. This individualism was later fostered by private property and strengthened by market economy and productive patterns that shifted toward staple crops.

4.6 Implications of history and culture, a comparative perspective

Through the description of variables of history and culture that influence participation and empowerment in the two contrasting study sites of Yacuiba and Qhayanas, some specific patterns stand out. As was presented throughout this chapter, vertical structures of the high Andes have recreated themselves over time and have created restricting factors for individual level participation, empowerment and technology innovation as understood by current research and development institutions. On the other hand, patterns in the lowlands include, open participation processes, respect for private property, thus fostering empowerment and technology innovation at the individual level. A completely opposite situation takes place with regards to collective empowerment which operates better in the highlands and presents restrictions in the lowlands. Table 4.13 presents a summary of the trends in participation and empowerment for both study sites. In North Potosí and Qhayanas processes of participation operate as part of the organization while in Yacuiba, Chaco, participation takes place at the individual level. Likewise, empowerment as the ability to make meaningful choices in particular context and to transform those choices into effective actions (See section 2.2.4), has a collectivist trend in North Potosí and an individualistic one in Chaco. Farmers in North Potosí have been empowered through their organization, while in the Chaco region farmers do not rely or depend on the organization to make meaningful choices in terms of agriculture and market initiatives.

Table 4.13 Comparative perspective of participation and power holding

Region	Participation in agriculture	Empowerment in agriculture
North Potosí (Qhayanas)	Participation is essentially functional* due to the differentiation of classes inside the communities. Only those considered who own land and have ancestry that owned it before 1952 can be elected as authorities. Community meetings seek to achieve specific objectives through internal negotiations. The same trend is followed on negotiations with external service providers. **Collective** • Participation is fostered inside the organization. Organizations are the axis of life and the cultural space for participation throughout history. • Individuals may participate at other levels as part or as representatives of the organization	**Collective** • The organization is strong and may exercise choice and influence the outcomes of that choice. Decisions on when, where and what to produce have always been made at the collective level and today is a deeply rooted cultural practice.
Chaco (Yacuiba)	Participation is essentially interactive *. In communities of smallholder families, some aspects of decision making, particularly control over municipal funds from "Popular Participation" are delegated to communities. Other aspects remain the competence of other decision makers. The same trend is followed on negotiations with external service providers. **Individual** • Individual participation is valued. The iyambae philosophy of the Guaraní in terms of autonomy and independence permeated and was fostered by market economy. • Organizations represent but do not lead communities.	**Individual level** • Individuals choose or do not choose on their own, yet they may be influenced by higher power flows. Decisions on when, where and what to produce have always been made at the family level and continue to be so.

Source: Personal elaboration

* See Figure 2.6

The trend of collectivism and individualism analysed in this chapter for both study sites will contribute to the analysis of changes that have taken place in Qhayanas and Yacuiba after the implementation of the participatory method for empowerment. Chapter 5 will reflect on the empowerment perceived by farmers before and after the implementation of the participatory method, while Chapter 6 will analyse the situation and changes of specific manifestations of agency and structure. The combined analysis of historic and cultural trends, farmer perception and manifestations of agency and structure will aid in the analysis of how participation and empowerment relate to each other under environmentally, culturally and historically different contexts.

Chapter 5. THE PERCEPTION OF EMPOWERMENT

The statistical results presented in this chapter were collected through household surveys in two contrasting regions of Bolivia. In Ayllu Qhayanas located in the highlands of North Potosí, four communities were included in the study with a total of 67 surveys collected in 2008 and 61 surveys in 2011. In the municipality of Yacuiba located in the dry lowlands of the Chaco Region, 4 communities were studied with a total of 39 surveys collected in 2008 and 54 in 2011 (See Table 3.5 for a detail of surveys collected). A general overview of current situation in each study site is presented in section 3.7, while a detail of the historic and cultural backgrounds of both sites is further elaborated in Chapter 4. In both study sites technology innovation projects were implemented to improve production and promote development. In parallel, a participatory initiative was introduced to empower farmers and enhance project outcomes through Participatory Monitoring and Evaluation. In addition to the statistical information presented some qualitative information from participant observation and secondary data are incorporated to describe the outcomes of the empowerment process.

Information on the perception of empowerment is structured following the evaluation matrix for research question number one (See Table 3.1). Three direct indicators for empowerment were used to depict the changes that occurred in the two study sites between 2008 during the initial stages of the implementation of the SEP method, and 2011 when both the SEP intervention and the innovation projects had concluded operation. These indicators are as presented in the conceptual framework (See Table 2.1): a) Opportunity to use influence; b) Praxis or the actual use of influence and, c) Outcome or the effectiveness of using influence (Alsop et al., 2006, Friedman - Rudovsky, 2008).

For example, empowerment in relation to the provision of agricultural services would mean:

Opportunity: A farmer is able to choose whether to receive agricultural services or not. There are agricultural service providers in the area and they do attend farmer's technical assistance demands.

Praxis: The farmer actually decides and does or does not receive agricultural services through technical assistance.

Outcome: A farmer receives technical assistance services for agricultural production and is able to increase production and income. Another

alternative would be that the farmer receives technical assistance but the application of new knowledge takes time and investment, and does not improve his productivity.

These three indicators (Opportunity, Praxis and Outcome) were measured across two domains or specific areas in people's lives (See Table 2.2) and that is a) agriculture and development services, b) market services. These two areas were considered due to the nature of the innovation projects that focused on agricultural production for development with some elements of market services and linkages.

History and culture affect the sense of empowerment perceived by farmers (See section 2.3.3). For this reason findings from Chapter 4 on history and culture will be recalled in this section to enlighten the analysis on the perception of empowerment. This integration will shed light on why changes have or have not taken place between 2008 and 2011.

5.1 Domain: Agriculture and Development

The agricultural technology innovation projects implemented in each study site had a participatory component that sought to empower farmers in order for them to increase their access to acceptable technological and development services. The analysis evaluates each domain and every level of empowerment separately to focus on factors that may or may not have affected the change in farmers' perceptions. Later an aggregated analysis is presented for every domain to achieve a consolidated vision of what farmers perceive in terms of empowerment.

5.1.1 Agriculture and Development: OPPORTUNITY

The opportunity to use influence and exercise choice has to do with the possibility of having access to decision making spaces. It reflects on the existence of choices (See Table 2.1). To understand peoples' access to these spaces three different sets of variables were analysed, a) those that relate to development services in general, b) those related to services for the agricultural and livestock sector in particular, and c) those specifically linked to the participatory initiative. The access perception was assessed at three levels: non-existent, difficult or easy. The survey included these three levels because for farmers the appreciation in three level differences is easier than that of broader scales with 5 or 7 levels where differences between levels are harder to specify.

5.1.1.1 Opportunity: Development services

To evaluate the perception of farmers regarding the opportunity to use influence and exercise choice in relation to development services, a set of variables were aggregated. These variables include the perceived access to services such as primary health care, specialized health care, primary education and secondary education (See question 60 in Appendix 1); with the access perception being assessed at three levels: non-existent, difficult or easy. The levels of access are derived from farmers' self-reported experience on accessing every service.

Although it may seem that the variables considered for the analysis are but components of access to basic services, it is important to note that during the period studied, from 2008 to 2011, there was a transition process in Bolivia. This transition process was essentially a political process external to the project implementation, where health and education services passed from being a responsibility of central governments to being managed by local municipal governments[118] (Plurinational State of Bolivia, 2009, Plurinational State of Bolivia, 2010b, Plurinational State of Bolivia, 2010a). Furthermore, under the framework of the Popular Participation Law these services are subject to control and accountability by local oversight committees[119] (Government of Bolivia, 1994). Local vigilance committees are appointed by individual or aggregated communities to evaluate service provision. The access to these types of services opens up formal spaces for the opportunity to use influence and exercise choice in terms of service provision, the inclusion of these variables thus being relevant for the analysis of empowerment.

Table 5.1 shows the variations in opportunity for both regions. According to these data there have been changes in terms of access to spaces for decision making between 2008 and 2011. The perception of opportunity to exercise choice in health and education services has generally dropped from 2008 to 2011.

[118] The new State Political Constitution enacted in February 2009, in its Article 299, Section II, 2; establishes that management of health and education services are concurrent by the central state level and autonomous territorial entities. Law 031 "Framework Law for Autonomies and Decentralization" in Articles 81 (Health) and 84 (Education) assign autonomous governments' specific competences on service provision for Health and Education. Furthermore, law 070 "" Article 80, details the specific competences of Departmental, Municipal and Indigenous autonomous governments in terms of technical support and resources for Education at local level.

[119] Article 10 of Law (1551) establishes the competences of local vigilance committees.

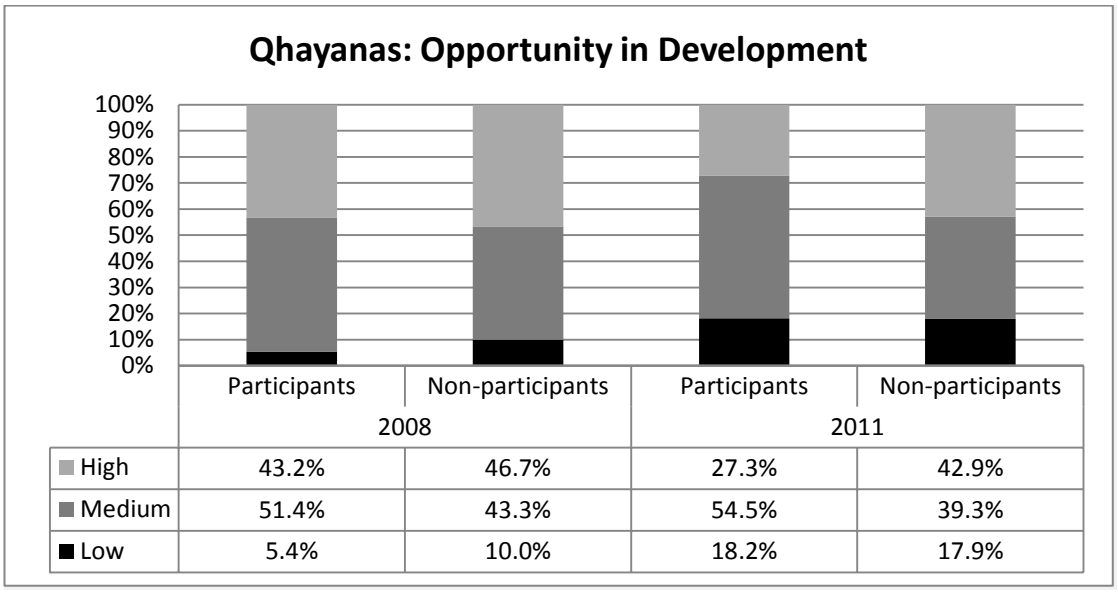
Table 5.1 Perception of Opportunity to Access Spaces in Development Services*

Region	Level	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Low Access	Frequency	2	3	5	6	5	11
		%	5.4%	10.0%	7.5%	18.2%	17.9%	18.0%
	Partial Access	Frequency	19	13	32	18	11	29
		%	51.4%	43.3%	47.8%	54.6%	39.3%	47.5%
	Good Access	Frequency	16	14	30	9	12	21
		%	43.2%	46.7%	44.8%	27.3%	42.9%	34.4%
	Total by Region	Frequency	37	30	67	33	28	61
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yacuiba	Low Access	Frequency	0	1	1	3	2	5
		%	0.0%	5.3%	2.6%	11.1%	7.4%	9.3%
	Partial Access	Frequency	11	10	21	15	12	27
		%	55.0%	52.6%	53.9%	55.6%	44.4%	50.0%
	Good Access	Frequency	9	8	17	9	13	22
		%	45.0%	42.1%	43.6%	33.3%	48.2%	40.7%
	Total by Region	Frequency	20	19	39	27	27	54
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

* Development includes: Primary and specialized health care, primary and secondary education.

The observable variations are more evident in the Qhayanas case where both the participant and non-participant groups experienced lower opportunity to access these services. In the Yacuiba case the participant group reported a reduction in the opportunity to access these services in 2011, while the non-participant group reported higher opportunity to access these services.

Figure 5.1 **Qhayanas: Perception of Opportunity to Access Spaces in Development Services**

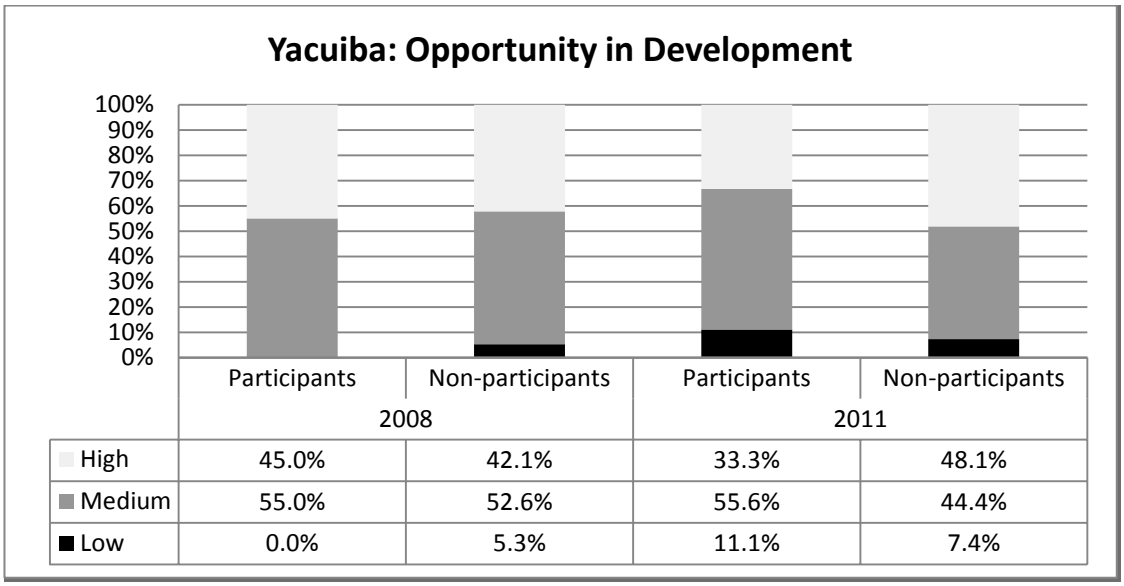


	Participants	Non-participants	Participants	Non-participants
	2008		2011	
High	43.2%	46.7%	27.3%	42.9%
Medium	51.4%	43.3%	54.5%	39.3%
Low	5.4%	10.0%	18.2%	17.9%

Observable variations associated to education services may be related to difficulties that primary schools were facing in the Qhayanas region. Due to continuous migration processes (See section 3.7.1 on current migration trends and Table 4.3 on migration patterns in history) and high distances between communities, most local schools are multileveled and have difficulties meeting the minimum numbers of students required to stay open (Jiménez Lora, 2001). When a school closes due to lack of students registered, students have to travel (usually walk) long distances to the nearest school (Jiménez Lora, 2001), therefore the perception of accessibility drops. A similar situation takes place for the case of basic health services in the North Potosí region (Montes and Dorado, 2007). It is important to mention that although the perception of accessibility to development services is an important part of empowerment, it was not directly addressed by the project and any changes experienced can therefore not be directly attributed to the participatory method or the project intervention.

In Yacuiba there is a general trend towards perceiving lower levels of opportunity that is more evident in the participating group.

Figure 5.2 **Yacuiba: Perception of Opportunity to Access Spaces in Development Services**



	Participants	Non-participants	Participants	Non-participants
	2008		2011	
High	45.0%	42.1%	33.3%	48.1%
Medium	55.0%	52.6%	55.6%	44.4%
Low	0.0%	5.3%	11.1%	7.4%

5.1.1.2 Opportunity: Agricultural services

To evaluate opportunity in relation to agricultural services a second set of variables were aggregated. These variables include general agricultural technical assistance services, technical assistance services for agro-chemicals, veterinary assistance services, credit services for agricultural production and participation in planning and monitoring of development initiatives (See question 60 in Appendix 1). As in the previous case the perceived possibility of access was typified in three levels: non-existent, difficult or easy.

Figure 5.2 shows the variations in opportunity for both Qhayanas and Yacuiba. According to this data there have been changes in terms of access to spaces for decision making for agricultural services between 2008 and 2011 for the participant group. These changes are in fact a perceived reduction in the opportunity of access to services.

Table 5.2 Perception of Opportunity to Access Spaces in Agricultural Services

Region	Level	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Low Access	Frequency	28	28	56	31	27	58
		%	75.7%	93.3%	83.6%	93.9%	96.4%	95.1%
	Partial Access	Frequency	9	2	11	2	1	3
		%	24.3%	6.7%	16.4%	6.1%	3.6%	4.9%
	Good Access	Frequency	0	0	0	0	0	0
		%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total by Region	Frequency	37	30	67	33	28	61
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yacuiba	Low Access	Frequency	7	11	18	19	23	42
		%	35.0%	57.9%	46.2%	70.4%	85.2%	77.8%
	Partial Access	Frequency	11	8	19	6	3	9
		%	55.0%	42.1%	48.7%	22.2%	11.1%	16.7%
	Good Access	Frequency	2	0	2	2	1	3
		%	10.0%	0.0%	5.1%	7.4%	3.7%	5.6%
	Total by Region	Frequency	20	19	39	27	27	54
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Own elaboration based on survey data sets.

* Existence of choice in the agricultural and livestock sector includes references of access to: general agricultural technical assistance services, technical assistance services for agro-chemicals, veterinary assistance services, credit services for agricultural production and participation in planning and monitoring of development initiatives

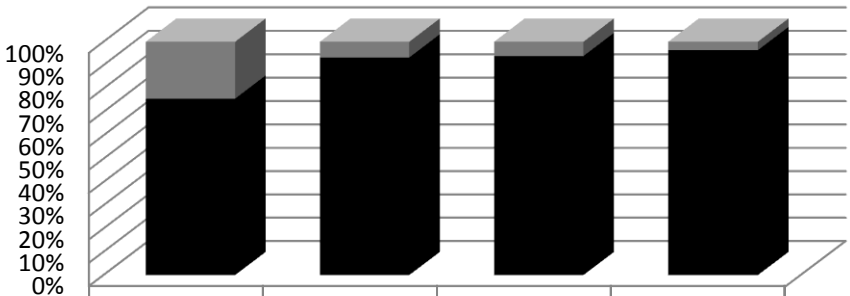
It is counterintuitive that after the execution of a technology innovation project with a strong participatory component, the participating group should perceive less opportunity to access these spaces. This has to do with the fact that by the time the baseline data were collected, the project had already started its initial implementation[120] in both Ayllu Qhayanas (PACA, 2009) and Yacuiba (Villcazana, 2008), therefore responses to the 2008 survey reflect the fact that the participating group had already been given opportunity through a space for choice making within the project. In 2011 both the Yacuiba and the PRODII projects had ceased in terms of PM&E implementation and people strongly felt the decline of these spaces. Furthermore, another prominent result of the data is that in Qhayanas access to these services and spaces is generally low and both at the beginning and at the end of the study, not one household expressed a high level of access to service provision in agriculture. This follows a

[120] A formal agreement to establish the PM&E method was officially signed between PROINPA and PRODII in May 2008. By that time the field technical personnel were already implementing the innovation project and began introducing participatory elements in their operation.

tendency introduced during the Spanish Colonial period (See section 4.1.2.3) which focused on extractive policies in relation to the Altiplano and which continued during the early republican period (See section 4.1.2.4). This tendency was intensified during the late republican period when development initiatives focused on the lowlands, relegating the highlands to subsistence. This is a direct effect of the national policies on the development of the agricultural sector (See sections 4.1.2.4 and 4.2.3)

Figure 5.3 shows in detail the changes perceived by farmers from Qhayanas in relation to opportunities to participate in the agricultural and livestock sector between 2008 and 2011.

Figure 5.3 Qhayanas: Perception of Opportunity to Access Spaces in Agricultural Services



	2008		2011	
	Participants	Non-participants	Participants	Non-participants
Good Access	0.0%	0.0%	0.0%	0.0%
Partial Access	24.3%	6.7%	6.1%	3.6%
Low Access	75.7%	93.3%	93.9%	96.4%

The following are reasons for the general low perception of access to agricultural and livestock services today:

a) There are no institutions providing credit services for agriculture in North Potosí – Qhayanas. Most credit schemes are directed to construction, services and marketing (Montes and Dorado, 2007).The region is considered a high risk region for credit provision for agricultural production[121] and in 2001 the government instated a law to pardon loans from small agricultural producers (Government of Bolivia, 2001).

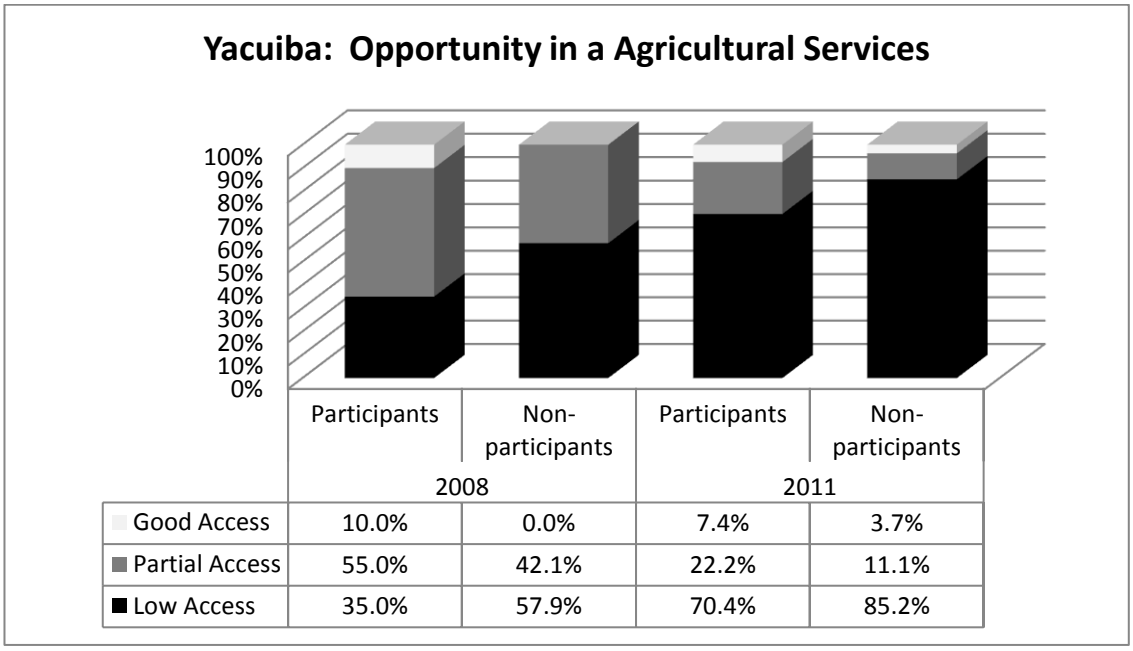
[121] Different credit schemes were implemented in North Potosí, yet an association and social movement were created to request credit pardoning.

b) Due to high poverty levels most farmers lack resources to access agrochemicals and therefore their use is limited and technical assistance, if at all provided, is only accessible in large markets. In addition, most donors that provide funds for development projects introduce elements of organic and sustainable production, which is increasingly creating within farmers the perception that agrochemicals should not be used (Jarro, 2010).
c) Livestock production is rudimentary; animals are being raised and managed in natural grasslands with almost no inputs. Veterinary services are usually intended only for extreme cases and for animals that may produce some income. Routine veterinary treatment is a very uncommon practice.
d) There is no public technical assistance provided for agriculture and livestock in the area. The departmental office of INIAF is based in the city of Potosí[122], and has no staff assigned either in Qhayanas or the North Potosí region in general (Chávez, 2012).
e) There are few non-governmental institutions providing technical assistance services in North Potosí (Polar, 2012); and in Qhayanas in particular there are only two organisations: PRODII and CAD[123].

During the late republican period in Yacuiba services for agriculture and livestock production have been fostered through a series of government initiatives and policies (See sections 4.1.2.4 sub section 1.3.1 and section 4.4.3). Results on access presented in Figure 5.4 reflect this historic process as well as the effects of the participatory method implemented.

[122] The nearest urban settlement from Qhayanas is the city of Llallagua located 260 km away from the city of Potosí.
[123] Spanish acronym that stands for "Development Support Centre"

Figure 5.4 Yacuiba: Perception of Opportunity to Access Spaces in Agricultural Services



	2008		2011	
	Participants	Non-participants	Participants	Non-participants
Good Access	10.0%	0.0%	7.4%	3.7%
Partial Access	55.0%	42.1%	22.2%	11.1%
Low Access	35.0%	57.9%	70.4%	85.2%

As can be observed in Figure 5.4, the situation in Yacuiba is somewhat different than in Qhayanas. There is a small group of farmers who do have high access to different agricultural and livestock services. Their higher access has to do with one or more of the following:

a) Possession of larger plots of land in comparison to those of the rest of the community that enables them to use more technologically sophisticated means of production (Farmer from Caraparí). That opens up the possibilities of access to credit in financial institutions operating in the town of Yacuiba, to purchase agrochemicals and/or veterinary products and access the technical assistance provided by the sellers.
b) In some cases farmers who produce seeds of corn and/or groundnuts receive technical assistance for seed production from the local INIAF office in Yacuiba town itself (J. Elías technical staff INIAF).
c) Several NGOs work in the Chaco Region providing technical assistance mainly on conservation of natural resources and prevention of desertification (Fundación Chaco web)

d) Municipalities are providing some technical assistance but their scale is limited due to other priorities in fund allocation[124] (PDM Yacuiba 2009 – 2010)

Similar to the Qhayanas case, in Yacuiba participating farmers had a higher perception of opportunity to access these services in 2008 in comparison to the perception of the same group in 2011. Yet, the perception of non-participating farmers in this case also dropped substantially in 2011. The following factors or combination of factors may have influenced this change in perception:

a) In 2008 the innovation project delivered by PROINPA and supported by both the Swiss cooperation agency COSUDE and the Departmental Government began to provide personalized and group technical assistance. Both participating and non-participating farmers benefited from the initiative (Polar et al., 2011a).
b) By November 2009 the innovation project delivered by PROINPA closed operation after the Departmental Government delayed and omitted payments to the service provider (Polar et al., 2011a), yet after a year of inactivity the service provider was able to channel some funds to conclude and close down the project in 2010 (Gandarillas M., 2011).
c) The operation of the Chaco Foundation, an institution that provided funds for technical assistance projects in the former National System and that later became independent, gradually reduced in magnitude in the specific project area during 2009 and 2010 (Cruz V., 2010).

5.1.1.3 Opportunity: Planning Monitoring and Evaluation

The opportunity of farmers to participate in planning, monitoring and evaluation of development interventions is evaluated through variables specifically linked to the participatory initiative (See question 60 in Appendix 1). Results on this perception are influenced by the presence and outreach of different types of service provision, but have also direct relation with the participatory method introduced in the operation of the technology innovation project in both study sites. In general the perception of opportunity to participate in planning monitoring and evaluation is higher in 2008 than in 2011 for both project participants and non-participants in the two study sites (See Table 5.3)

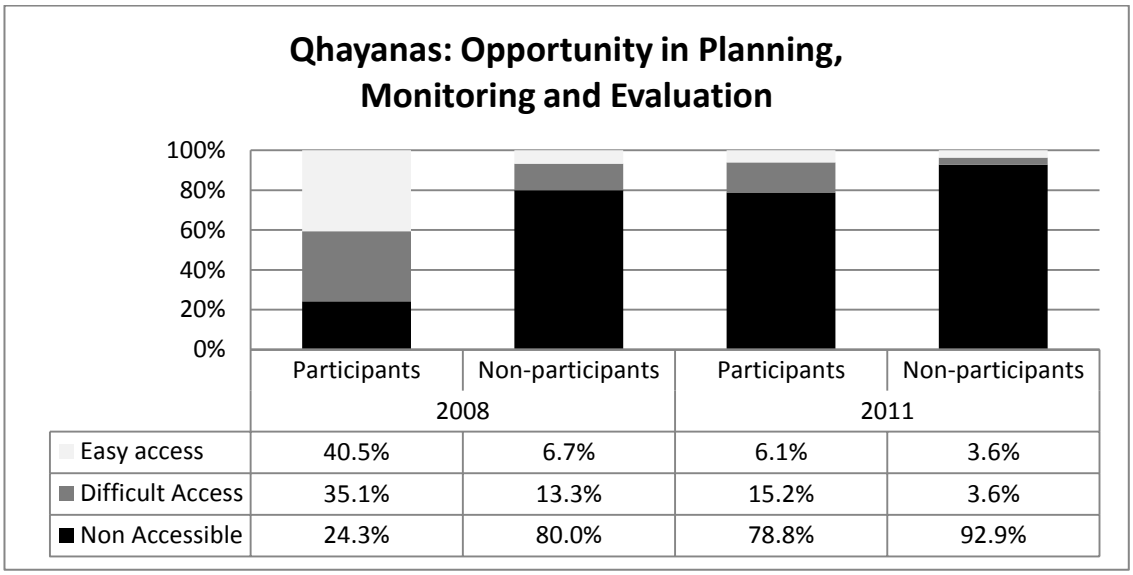
[124] During 2009 and 2010 a high percentage of the municipal funds were allocated to the modernization and transformation of the town's central square and other urban infrastructure initiatives.

Table 5.3 Perception of Opportunity to Access Spaces in Planning Monitoring and Evaluation

Region	Level	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Low Access	Frequency	9	24	33	26	26	52
		%	24.3%	80.0%	49.3%	78.8%	92.9%	85.2%
	Partial Access	Frequency	13	4	17	5	1	6
		%	35.1%	13.3%	25.4%	15.2%	3.6%	9.8%
	Good Access	Frequency	15	2	17	2	1	3
		%	40.5%	6.7%	25.4%	6.1%	3.6%	4.9%
	Total by Region	Frequency	37	30	67	33	28	61
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yacuiba	Low Access	Frequency	7	14	21	21	26	47
		%	35.0%	73.7%	53.8%	77.8%	96.3%	87.0%
	Partial Access	Frequency	9	3	12	3	1	4
		%	45.0%	15.8%	30.8%	11.1%	3.7%	7.4%
	Good Access	Frequency	4	2	6	3	0	3
		%	20.0%	10.5%	15.4%	11.1%	0.0%	5.6%
	Total by Region	Frequency	20	19	39	27	27	54
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Figure 5.5 shows that in Qhayanas there was a higher perception of opportunity in relation to planning, monitoring and evaluation of interventions during the first survey in 2008, particularly for the participating farmers. This reflects on the introduction of the SEP methodology (See section 3.8) which emphasizes strongly on processes of planning, monitoring and evaluation, during the first semester of 2008. The considerable reduction in the perception of opportunity in 2011 reflects on the conclusion of the project and the lack of spaces where the process could be continued.

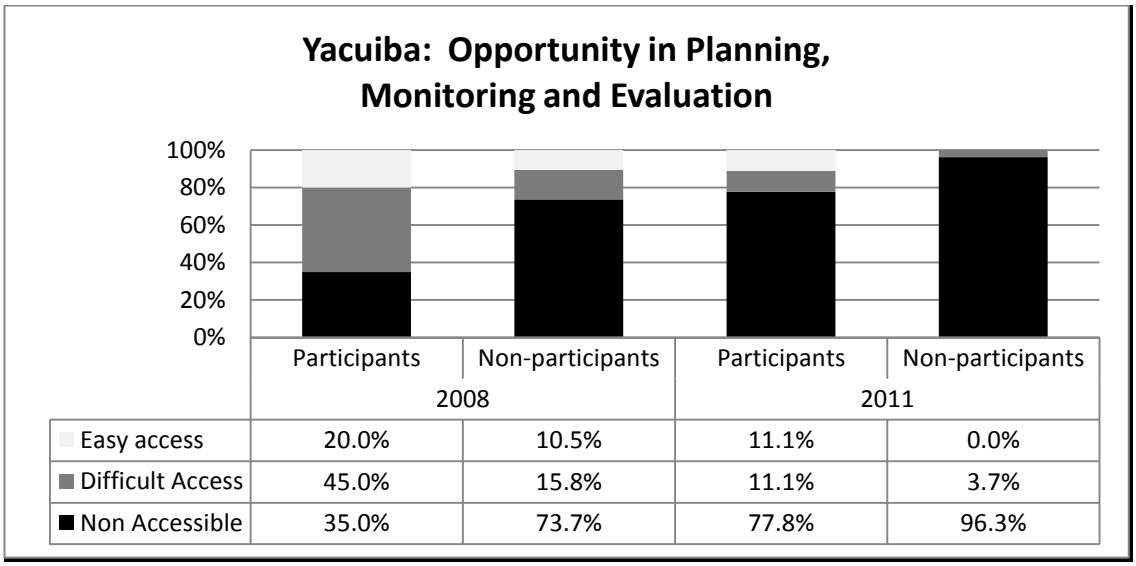
Figure 5.5 **Qhayanas: Perception of Opportunity to Access Spaces in Planning, Monitoring and Evaluation**



	Participants 2008	Non-participants 2008	Participants 2011	Non-participants 2011
Easy access	40.5%	6.7%	6.1%	3.6%
Difficult Access	35.1%	13.3%	15.2%	3.6%
Non Accessible	24.3%	80.0%	78.8%	92.9%

A similar situation takes place in Yacuiba where both the perception of participants and non-participants is considerably higher in 2008. The abrupt closure of the project in Yacuiba significantly affected the results in 2011.

Figure 5.6 **Yacuiba: Perception of Opportunity to Access Spaces in Planning, Monitoring and Evaluation**



	Participants 2008	Non-participants 2008	Participants 2011	Non-participants 2011
Easy access	20.0%	10.5%	11.1%	0.0%
Difficult Access	45.0%	15.8%	11.1%	3.7%
Non Accessible	35.0%	73.7%	77.8%	96.3%

5.1.2 Agriculture and Development: PRAXIS

Praxis reflects on the actual use of influence and exercise of choice (See Table 2.1). In this study it was measured through frequency of self-reported interactions with service providers to request or suggest changes or improvements on service provision in the agricultural and development sector (See question 35 in Appendix 1). The different levels reflect on the number or frequency of interactions reported. Table 5.4 shows how the level of influence has generally decreased from 2008 to 2011 in both study sites and for both the participant and non- participant groups.

Table 5.4 Perception of Praxis or use of choice in Agricultural and Development Services

Region	Level*	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	High Usage	Frequency	7	6	13	4	4	8
		%	18.9%	20.0%	19.4%	12.1%	14.3%	13.1%
	Medium Usage	Frequency	11	8	19	1	1	2
		%	29.7%	26.7%	28.4%	3.0%	3.6%	3.3%
	Low Usage	Frequency	9	3	12	5	5	10
		%	24.3%	10.0%	17.9%	15.2%	17.9%	16.4%
	No Usage	Frequency	10	13	23	23	18	41
		%	27.0%	43.3%	34.3%	69.7%	64.3%	67.2%
	Total by Region	Frequency	37	30	67	33	28	61
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yacuiba	High Usage	Frequency	10	5	15	6	4	10
		%	50.0%	26.3%	38.5%	22.2%	14.8%	18.5%
	Medium Usage	Frequency	1	0	1	6	9	15
		%	5.0%	0.0%	2.6%	22.2%	33.3%	27.8%
	Low Usage	Frequency	4	1	5	4	0	4
		%	20.0%	5.3%	12.8%	14.8%	0.0%	7.4%
	No Usage	Frequency	5	13	18	11	14	25
		%	20.0%	10.5%		11.1%	0.0%	5.6%
	Total by Region	Frequency	20	19	39	27	27	54
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

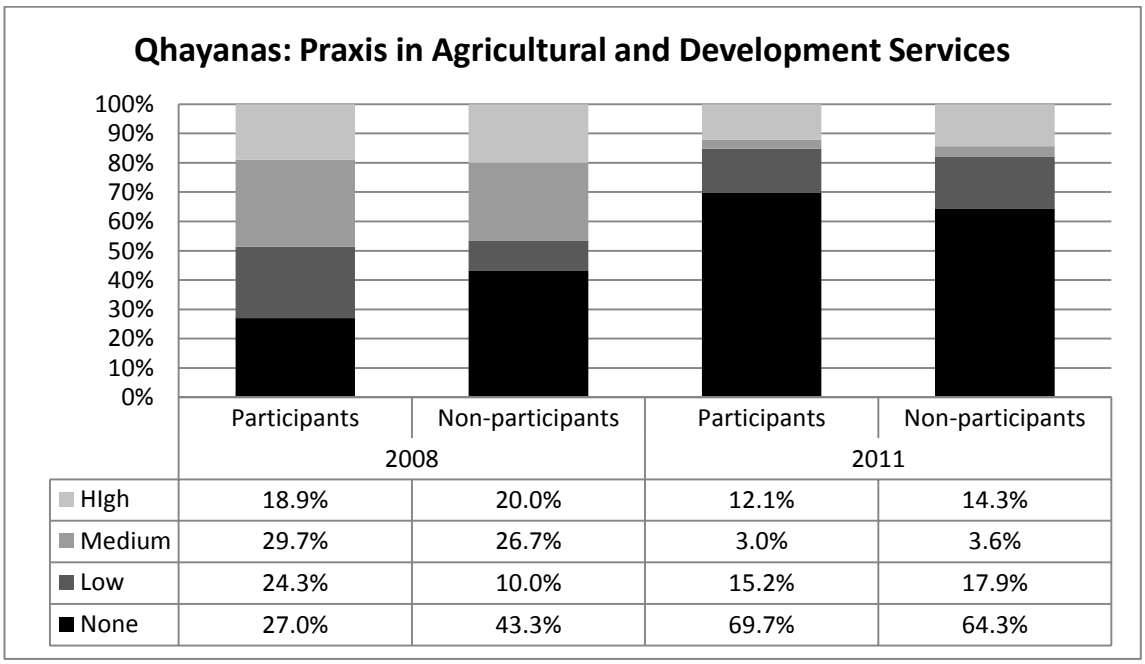
* None = 0; Low = 1; Medium = 2; High = 3 or more

In Qhayanas the level of reported use of influence or exercise of choice typified as Praxis, declined substantially between 2008 and 2011, yet this descent has been more evident in the participant group (See Figure 5.7). This information strongly contradicts the fact that for most

leaders and community people interviewed, the implemented project had been very successful in terms of participation in decision making on agricultural and development interventions (See Quote 11). Furthermore, project implementing staff from the NGO reported high levels of participation in project activities and adoption of new practices.

Quote 11. *Before we received projects as presents. If they were good or bad it was ok. Now we know that we can decide and we can complain if things are not working as they should. For example one technician didn't attend meetings on time or just skipped them, and people were not happy with the way he organized activities and related to farmers. This is what the SEP evaluation said. First we negotiated with him but things wouldn't change so we sent our SEP reports to PRODII. They listened and changed the person. Now we all are more committed to the activities and we understand the explanations better in Quechua. (Female participant approximately 35 years old, February 2010)*

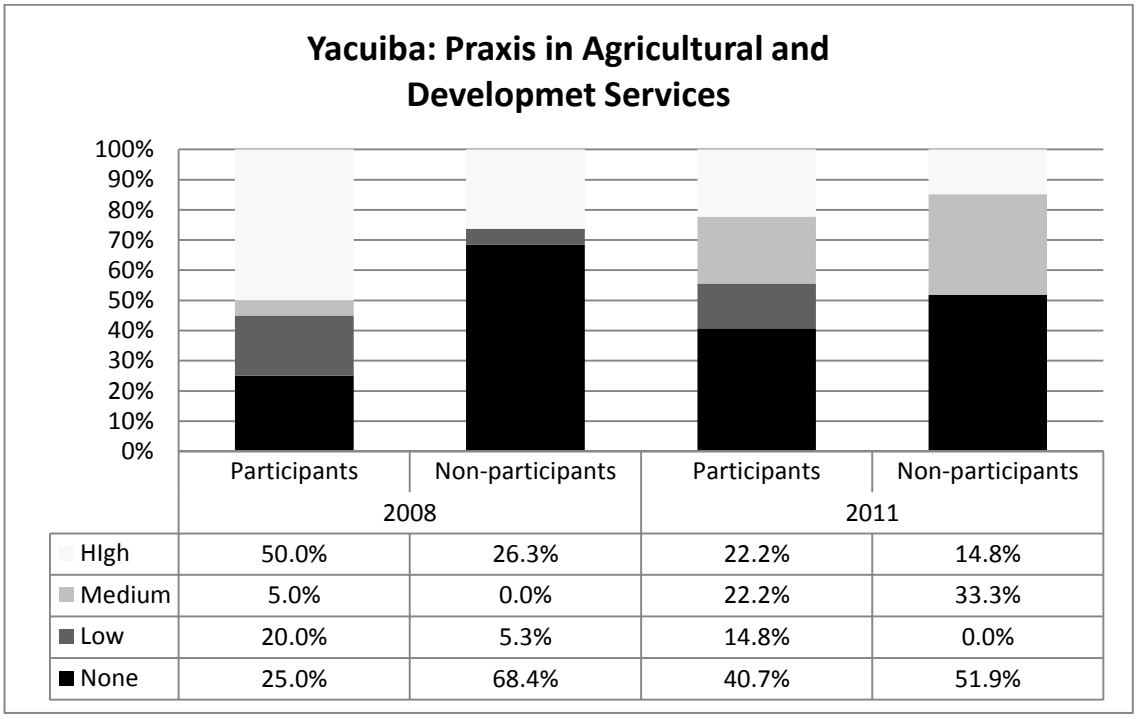
Figure 5.7 Qhayanas: Perception of Praxis in Agriculture and Development Services



	2008		2011	
	Participants	Non-participants	Participants	Non-participants
HIgh	18.9%	20.0%	12.1%	14.3%
Medium	29.7%	26.7%	3.0%	3.6%
Low	24.3%	10.0%	15.2%	17.9%
None	27.0%	43.3%	69.7%	64.3%

In the Yacuiba case, although the general pattern reflects a reduction in praxis between 2008 and 2011, there are some other results of perceptions that need to be considered in more detail. For example, in the non-participant group the tendency has shifted towards non-extreme levels. While in 2008, 68.4% of the interviewees from this group reported no praxis in the use of influence or exercise of choice throughout the previous year, in 2011 that figure dropped to 51.9%. Within that same non-participant group, in 2008 there were 26.3% of people reporting a high level of praxis in the use of influence and choice exercise. This figure drops to a 14.8% in 2011 (See Figure 5.8).

Figure 5.8 Yacuiba: Perception of Praxis in Agriculture and Development Services



	Participants	Non-participants	Participants	Non-participants
	2008		2011	
HIgh	50.0%	26.3%	22.2%	14.8%
Medium	5.0%	0.0%	22.2%	33.3%
Low	20.0%	5.3%	14.8%	0.0%
None	25.0%	68.4%	40.7%	51.9%

5.1.3 Agriculture and Development: OUTCOME

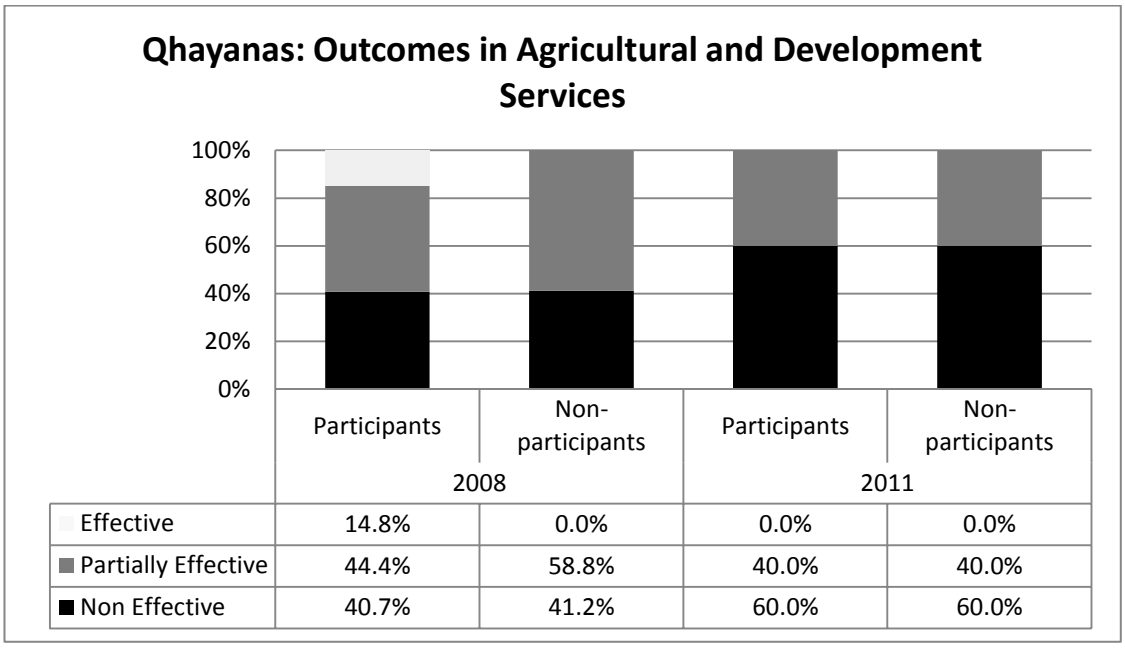
The outcome or effectiveness that resulted from the influence used and the choices made was measured through reported success in response achieved from service providers when changes or improvements to the service were requested (See question 36 in Appendix 1). The different levels reflect the frequency of positive responses to interactions. Non-effective reflects that none of the requests or suggestions was at all considered. Partially effective is reported when some of the requests or suggestions were addressed while others were not. Effective is reported when all requests or suggestions made to the service provider were addressed. Table 5.5 shows the effectiveness of the influence used and choices made across years and study sites.

Table 5.5 Perception of Outcomes from the use of choice in Agricultural and Development Services

Region	Level	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Effective	Frequency	4	0	4	0	0	0
		%	14.8%	0.0%	9.1%	0.0%	0.0%	0.0%
	Partially Effective	Frequency	12	10	22	4	4	8
		%	44.4%	58.8%	50.0%	40.0%	40.0%	40.0%
	Non Effective	Frequency	11	7	18	6	6	12
		%	40.7%	41.2%	40.9%	60.0%	60.0%	60.0%
	Total by Region	Frequency	27	17	44	10	10	20
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yacuiba	Effective	Frequency	3	0	3	2	1	3
		%	20.0%	0.0%	14.3%	12.5%	7.7%	10.3%
	Partially Effective	Frequency	10	4	14	12	10	22
		%	66.7%	66.7%	66.7%	75.0%	76.9%	75.9%
	Non Effective	Frequency	2	2	4	2	2	4
		%	13.3%	33.3%	19.0%	12.5%	15.4%	13.8%
	Total by Region	Frequency	15	6	21	16	13	29
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

In Qhayanas both the participant and non-participant groups experienced a reduction in the level of effectiveness of their interactions with service providers between 2008 and 2011. In 2008, approximately 40% of both the participant and non-participant groups perceived most outcomes to be non-effective. By 2011 this figure rose to 60% of both participants and non-participants perceiving non-effective outcomes. Yet if we go beyond the proportion of the sample and observe the actual numbers of people who reported this interaction and who were able to evaluate its effectiveness the changes are even more evident. While 44 households actually exercised choice and were able to evaluate its effectiveness in 2008, in 2011 only 20 households reported having interacted with service providers and were able to evaluate the effectiveness. This shows a reduction of more than 50% in the actual number of individuals that reached this level of empowerment in 2011.

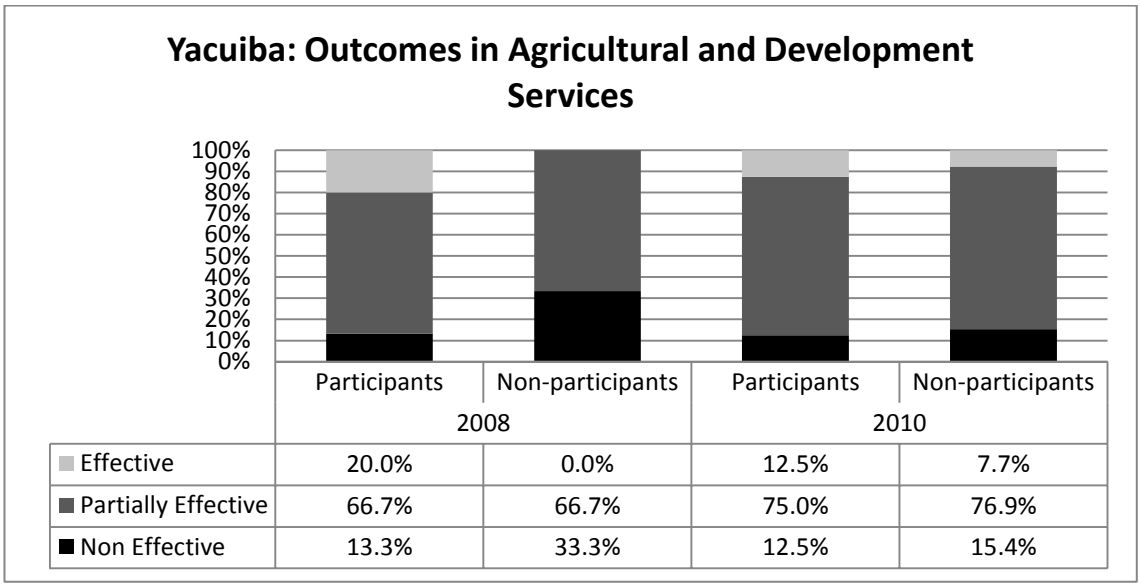
Figure 5.9 **Qhayanas: Perception of Outcomes from choice making in Agricultural and Development Services**



	2008 Participants	2008 Non-participants	2011 Participants	2011 Non-participants
Effective	14.8%	0.0%	0.0%	0.0%
Partially Effective	44.4%	58.8%	40.0%	40.0%
Non Effective	40.7%	41.2%	60.0%	60.0%

In Yacuiba the participant group perceived that outcomes decreased slightly in effectiveness between 2008 and 2011, but the non-participant group perceived that outcomes from the interaction with service providers increased in effectiveness. Furthermore, the actual numbers of households that reported effective or partially effective outcomes from the interaction with service providers rose from 13 to 14 in the participating group and from 4 to 11 in the non-participating group. This shows higher levels of empowerment through a general increase in both interactions with service providers, and effectiveness of those interactions.

Figure 5.10 **Yacuiba: Perception of Outcomes from choice making in Agricultural and Development Services**



	Participants 2008	Non-participants 2008	Participants 2010	Non-participants 2010
Effective	20.0%	0.0%	12.5%	7.7%
Partially Effective	66.7%	66.7%	75.0%	76.9%
Non Effective	13.3%	33.3%	12.5%	15.4%

Although the quantitative data would seem to contradict the qualitative information provided by local people and technical staff, results from both sets of data were complementary. People did actually perceive lower levels of empowerment when the projects ended because despite the outcome of the project, its conclusion implied a reduction in the opportunities for the exercise of choice and decision making. The lack of opportunities affected also the praxis and outcome of choice making.

The dynamic of apparent empowerment loss in the participant group reflects the fact that high expectations were created amongst farmers during the initial months of project implementation. The first SEP workshops emphasized on farmer involvement in decision making and thus farmers were expecting to be able to adjust and modify the course of this and other interventions through the interaction with service providers. Yet despite the fact that the project provided a space for the practice of participation and use of influence through its intervention, once the project withdrew from the area, farmers in the participant group keenly perceived this absence.

5.1.4 Agriculture and Development: A combined empowerment perception

Combining the different variables used to understand and describe the perception of empowerment in terms of opportunity, praxis and outcome, a general empowerment level variable was created for agriculture and development. Results were aggregated and grouped

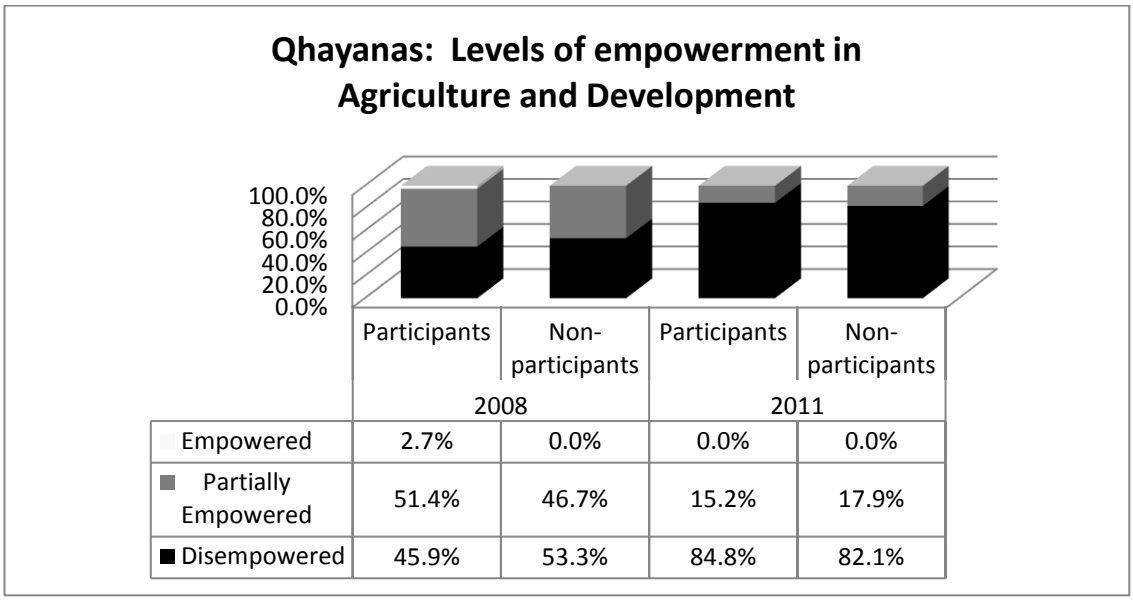
in a three level scale of Disempowerment, Partial Empowerment and Full Empowerment. The aggregate perception of empowerment shows that in both study sites there has been a shift in perception towards lower levels of empowerment (See Table 5.6).

Table 5.6 Levels of empowerment perceived in agriculture and development

Region	Level of Empowerment	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Disempowered	Frequency	17	16	33	28	23	51
		%	45.9%	53.3%	49.3%	84.8%	82.1%	83.6%
	Partially Empowered	Frequency	19	14	33	5	5	10
		%	51.4%	46.7%	49.3%	15.2%	17.9%	16.4%
	Fully Empowered	Frequency	1	0	1	0	0	0
		%	2.7%	0.0%	1.5%	0.0%	0.0%	0.0%
	Total by Region	Frequency	37	30	67	33	28	61
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yacuiba	Disempowered	Frequency	6	14	20	13	14	27
		%	30.0%	73.7%	51.3%	48.1%	51.9%	50.0%
	Partially Empowered	Frequency	10	5	15	12	12	24
		%	50.0%	26.3%	38.5%	44.4%	44.4%	44.4%
	Fully Empowered	Frequency	4	0	4	2	1	3
		%	20.0%	0.0%	10.3%	7.4%	3.7%	5.6%
	Total by Region	Frequency	20	19	39	27	27	54
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

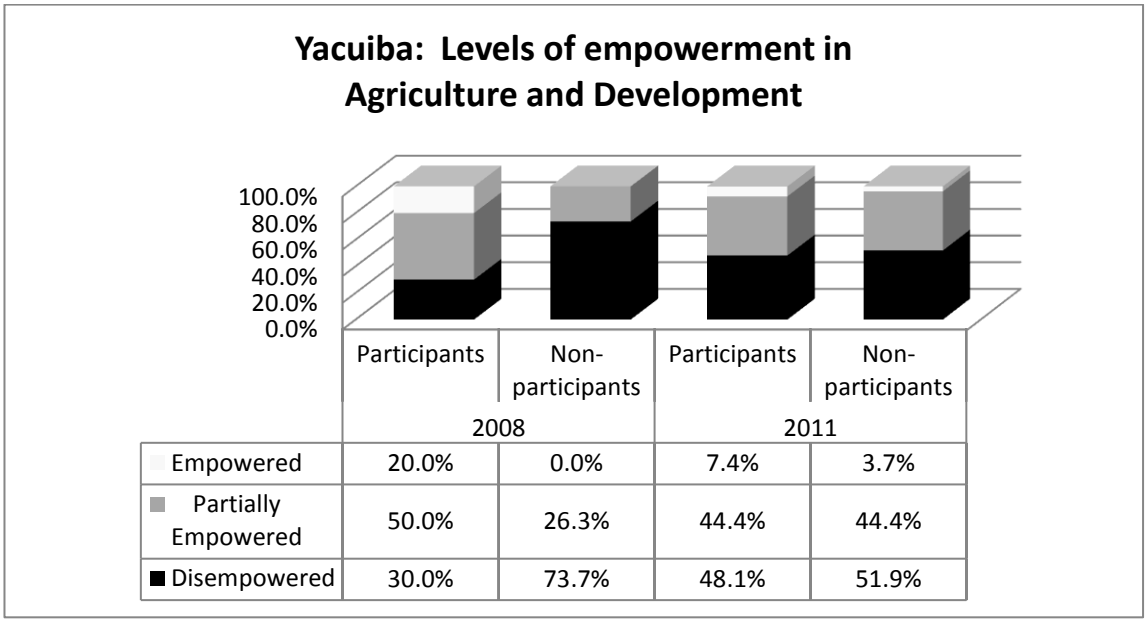
Shifts towards lower levels of empowerment are more evident in Qhayanas where ironically both project staff and farmers expressed positive satisfaction about project outcomes. In 2008 there was a small group of participating farmers (2.7%) that perceived full empowerment while 51% of the population perceived partial empowerment. These numbers decrease to 15.2% partially empowered and no one fully empowered in 2011 (See Figure 5.11). The perception of the non-participant group from Qhayanas follows a similar pattern although changes are of a lesser magnitude.

Figure 5.11 **Qhayanas: Levels of empowerment perceived in agriculture and development**



The Yacuiba case on the other hand shows a reduction in the levels of empowerment perceived only for the participating group where from having 20% of the group sensing full empowerment and 50% sensing partial empowerment in 2008, figures drop to 7.4% of full empowerment and 44.4% of partial empowerment. The non-participant group on the other hand shows an inverse perception. In 2008, 73.7% of the non-participating group in Yacuiba perceived themselves as disempowered and in 2011 only 51.9 % perceived this level of disempowerment.

Figure 5.12 **Yacuiba: Levels of empowerment perceived in agriculture and development**



To understand the shift towards a sense of disempowerment after the conclusion of projects that promoted technology innovation, participation and empowerment; we can deduce that the exercise of participation and choice making through the innovation project and SEP initiatives in both Qhayanas and Yacuiba gave people a taste of empowerment. The conclusion of the projects along with the lack of clarity from the new public legislation has left farmers with reduced opportunities and spaces to exercise these choices in agriculture and development, thus creating a sense of lower levels of empowerment. The positive feedback from the project implementation in Qhayanas and the difficulties faced in Yacuiba show the fact that the more successful the initiative, the more severe the withdrawal symptoms will be.

The historic background and cultural traditions in each study site have also influenced the withdrawal symptoms that left farmers perceiving more disempowerment in 2011 in comparison to 2008. In the North Potosí region and particularly in the area of influence of Ayllu Qhayanas a collectivist social structure has operated since Pre-Hispanic times (See Table 4.3). This structure involved functional participation (See Table 4.13) of families in deliberative processes where ultimate decisions were held by elites. Over time the strength of the local elites fluctuated, yet some traits persisted mainly in relation to land tenure rights (See Section 4.2.3). Lack of public agricultural services and limited access to other services also limited the opportunities of farmers. The introduction of SEP was in this context an eye-opening experience (See Quote 11, Pg. 188), thus the absence of the project left farmers back in their old reality sensing the "gap" or effects of withdrawal.

5.2 Domain: Market Services

The innovation projects implemented in each study site had strong agricultural technology components but also incorporated market elements. The participatory methodology introduced sought to empower farmers in order to increase their access to services in terms of agricultural technology, development and market. This section will present results of an analysis of the perception of empowerment in the market domain. The analysis follows the previous account of opportunity, praxis and outcome, and later including an aggregated vision.

5.2.1 Market Services: OPPORTUNITY

The opportunity to use influence and exercise choice in the market domain includes having access to markets and market services. To analyse peoples' opportunity to access these

services a variable was created that incorporated the perception of access to technical assistance for processing and marketing of agricultural products, credit services for marketing, bulking and assembly of agricultural products, physical access to markets, processing plants, and daily transport for agricultural production (See question 60 in Appendix 1); with opportunity being assessed at three levels: non-existent, difficult and easy, as was mentioned in earlier sections. Table 5.7 shows the variation in level of access to spaces for the exercise of choice in market services.

Table 5.7 Perception of Opportunity to Access Market Services

Region	Level	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Low Access	Frequency	33	29	62	32	28	60
		%	89.19%	96.67%	92.54%	96.97%	100.00%	98.36%
	Partial Access	Frequency	4	1	5	1	0	1
		%	10.81%	3.33%	7.46%	3.03%	0.00%	1.64%
	Good Access	Frequency	0	0	0	0	0	0
		%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Total by Region	Frequency	37	30	67	33	28	61
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yacuiba	Low Access	Frequency	15	16	31	25	26	51
		%	75.00%	84.21%	79.49%	92.59%	96.30%	94.44%
	Partial Access	Frequency	4	3	7	2	1	3
		%	20.00%	15.79%	17.95%	7.41%	3.70%	5.56%
	Good Access	Frequency	1	0	1	0	0	0
		%	5.00%	0.00%	2.56%	0.00%	0.00%	0.00%
	Total by Region	Frequency	20	19	39	27	27	54
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

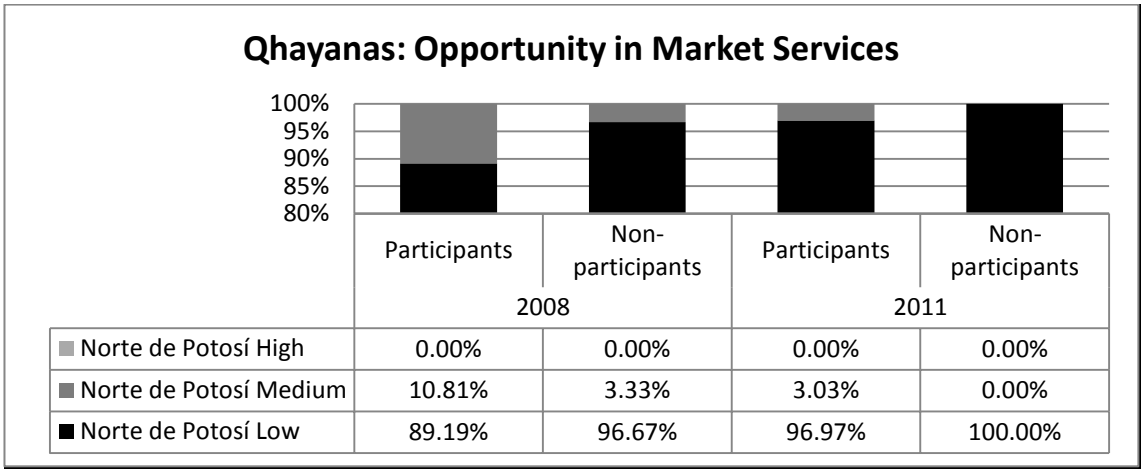
Source: Own elaboration based on survey data sets.

In both study sites there was a reduction in the perception of opportunity to access markets and market services. The main difference between both sites is the degree of reduction in this perception of opportunity.

In the Qhayanas region agricultural production is strongly restricted by environmental conditions where high altitude, drought, frost and hail reduce productivity. Most farmers produce only for home consumption as there rarely is a surplus for the market. The technology innovation project delivered in Qhayanas sought to improve agricultural production in order to generate surplus that could later be linked to different market opportunities. Most of the project emphasis was directed towards sustainable improvement

of production to ensure food security and surplus production, while only a small proportion of the efforts were concentrated on market linkages. Results show that overall market opportunities in Qhayanas are extremely low (See Figure 5.13).

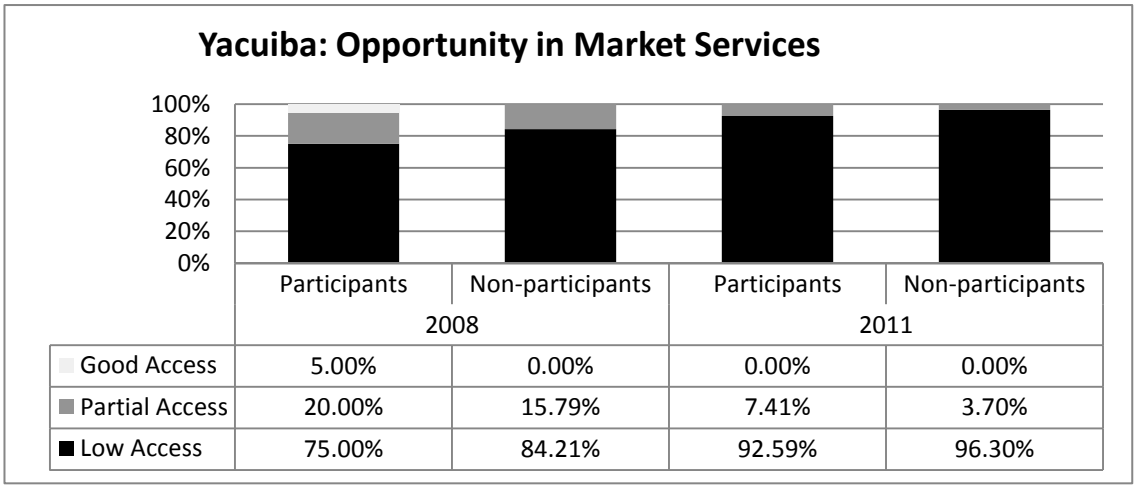
Figure 5.13 Qhayanas: Perception of Opportunity to Ac/cess Market Services



	2008		2011	
	Participants	Non-participants	Participants	Non-participants
Norte de Potosí High	0.00%	0.00%	0.00%	0.00%
Norte de Potosí Medium	10.81%	3.33%	3.03%	0.00%
Norte de Potosí Low	89.19%	96.67%	96.97%	100.00%

The survey information shows that a high proportion of the families perceive low levels of access to market services. In 2008, 89.2% of the participating families and 96.7% of the non-participating families perceived low access to market services. In 2011 there is an increase in the perception of low access to these services, as 97% of the participating families and 100% of the non-participating families perceive low levels of access to market services. The situation in Yacuiba has followed a similar pattern of change. In 2008, 75% of the participating families and 84.5% of the non-participating families reported low levels of access to market services while in 2011, more than 90% of both participating and non-participating families perceived low levels of access to market services.

Figure 5.14 Yacuiba: Perception of Opportunity to Access Market Services



	2008		2011	
	Participants	Non-participants	Participants	Non-participants
Good Access	5.00%	0.00%	0.00%	0.00%
Partial Access	20.00%	15.79%	7.41%	3.70%
Low Access	75.00%	84.21%	92.59%	96.30%

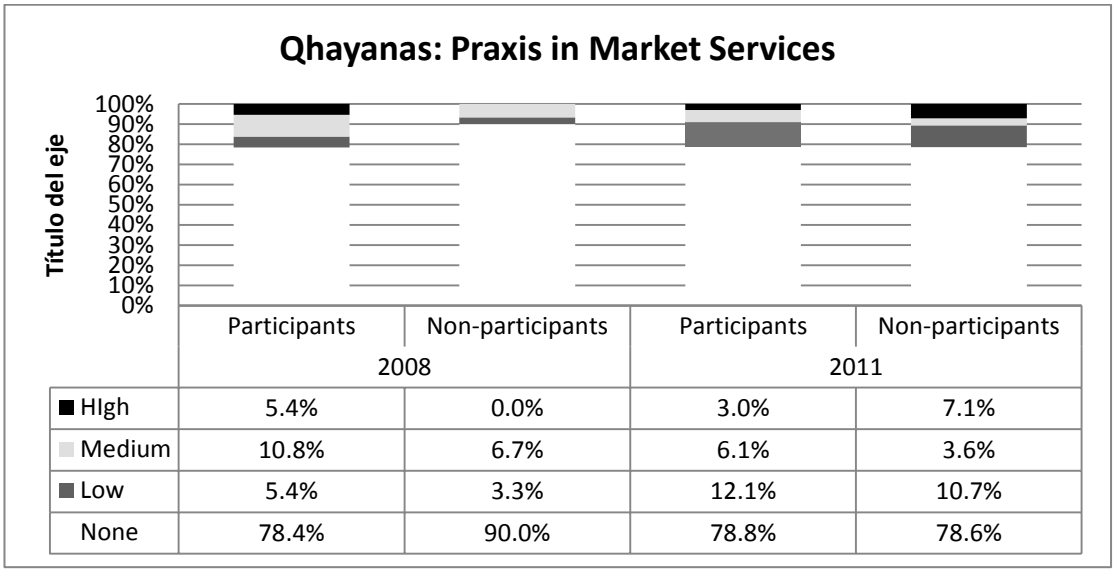
5.2.2 Market Services: PRAXIS

Praxis in the market domain refers to the use of influence and exercise of choice when accessing market services or actually interacting in the market (See question 40 in Appendix 1). Praxis in market services was evaluated through frequency of self-reported interactions with market initiatives (See Table 5.8). The different levels reflect on the number of interactions reported.

Table 5.8 Perception of Praxis or use of choice in Market Services

Region	Level	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	High	Frequency	2	0	2	1	2	3
		%	5.4%	0.0%	3.0%	3.0%	7.1%	4.9%
	Medium	Frequency	4	2	6	2	1	3
		%	10.8%	6.7%	9.0%	6.1%	3.6%	4.9%
	Low	Frequency	2	1	3	4	3	7
		%	5.4%	3.3%	4.5%	12.1%	10.7%	11.5%
	None	Frequency	29	27	56	26	22	48
		%	78.4%	90.0%	83.6%	78.8%	78.6%	78.7%
	Total by Region	Frequency	37	30	67	33	28	61
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yacuiba	High	Frequency	1	0	1	2	2	4
		%	5.0%	0.0%	2.6%	7.4%	7.4%	7.4%
	Medium	Frequency	1	1	2	1	1	2
		%	5.0%	5.3%	5.1%	3.7%	3.7%	3.7%
	Low	Frequency	1	0	1	2	0	2
		%	5.0%	0.0%	2.6%	7.4%	0.0%	3.7%
	None	Frequency	17	18	35	22	24	46
		%	85.0%	94.7%	89.7%	81.5%	88.9%	85.2%
	Total by Region	Frequency	20	19	39	27	27	54
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

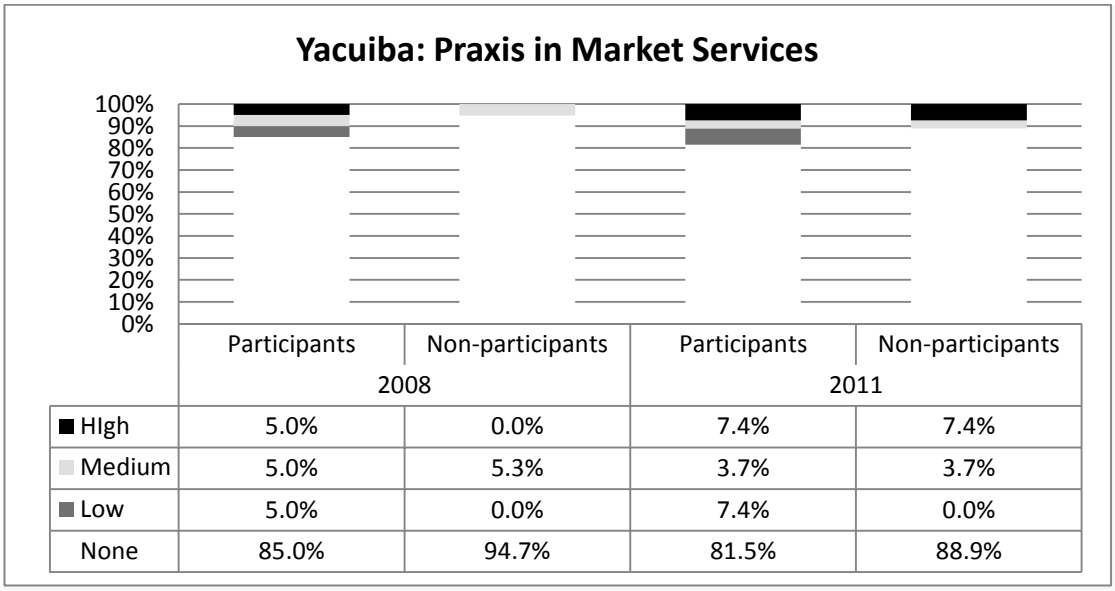
Figure 5.15 Qhayanas: Perception of Praxis in Market Services



	Participants	Non-participants	Participants	Non-participants
	2008		2011	
HIgh	5.4%	0.0%	3.0%	7.1%
Medium	10.8%	6.7%	6.1%	3.6%
Low	5.4%	3.3%	12.1%	10.7%
None	78.4%	90.0%	78.8%	78.6%

In the Yacuiba case there was a general increase in praxis. According to survey results the perceived frequency of use of influence and exercise of choice in market services and linkages improved. In 2008, 85% of the participating families had no interaction with market linkages or services in terms of using influence and exercising choice. In 2011 that figure fell to 81.5%. Likewise, in the non-participating families having no interaction fell from 94.7% to 88.9%, and while in 2008 no family reported having high levels of interaction, in 2011 there were 7.4% of families reporting high levels of interaction.

Figure 5.16 Yacuiba: Perception of Praxis in Market Services



	Participants	Non-participants	Participants	Non-participants
	2008		2011	
HIgh	5.0%	0.0%	7.4%	7.4%
Medium	5.0%	5.3%	3.7%	3.7%
Low	5.0%	0.0%	7.4%	0.0%
None	85.0%	94.7%	81.5%	88.9%

5.2.3 Market Services: OUTCOME

The outcome or effectiveness of the influence used and the choices made was measured through reported success in response achieved from market interactions opportunities in Qhayanas are extremely low (See question 41 in Appendix 1) . The different levels reflect the frequency of positive outcomes or effectiveness resulting from these interactions. 'Non-effective' reflects that none of the interactions with the market produced any positive outcomes. 'Partially-effective' implies that some interactions produce positive outcomes while others didn't. 'Effective' reflects that all interactions with the market yielded positive results. Table 5.9 shows the outcomes of the influence used and choices made in market linkages in both study sites.

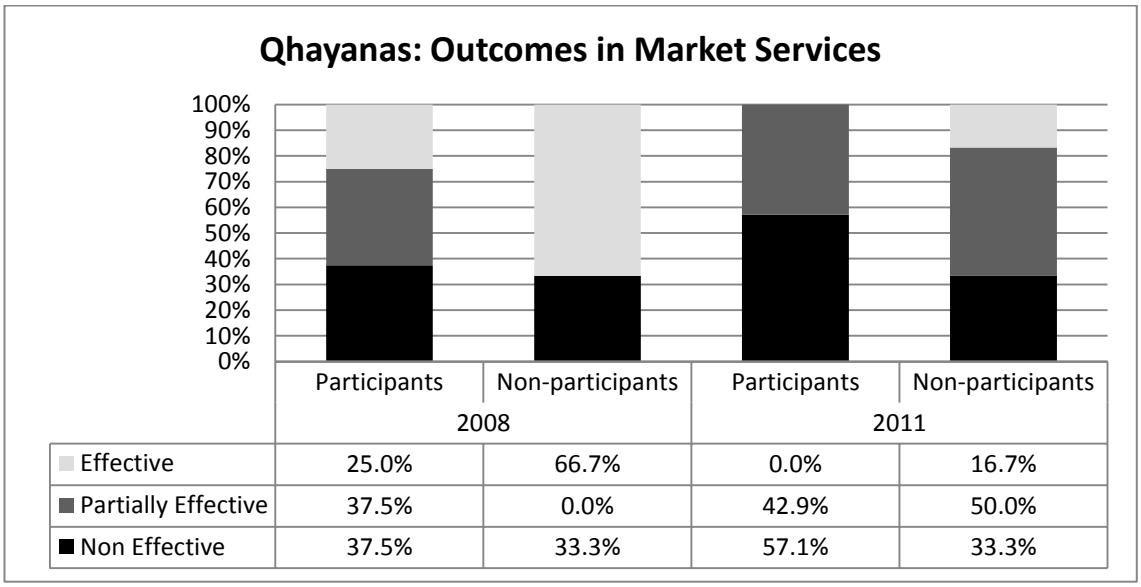
Table 5.9 Perception of Outcomes from the use of choice in Market Services

Region	Level	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Effective	Frequency	2	2	4	0	1	1
		%	25.0%	66.7%	36.4%	0.0%	16.7%	7.7%
	Partially Effective	Frequency	3	0	3	3	3	6
		%	37.5%	0.0%	27.3%	42.9%	50.0%	46.2%
	Non Effective	Frequency	3	1	4	4	2	6
		%	37.5%	33.3%	36.4%	57.1%	33.3%	46.2%
	Total by Region	Frequency	8	3	11	7	6	13
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yacuiba	Effective	Frequency	0	0	0	1	1	2
		%	0.0%	0.0%	0.0%	20.0%	33.3%	25.0%
	Partially Effective	Frequency	3	0	3	4	2	6
		%	100.0%	0.0%	75.0%	80.0%	66.7%	75.0%
	Non Effective	Frequency	0	1	1	0	0	0
		%	0.0%	100.0%	25.0%	0.0%	0.0%	0.0%
	Total by Region	Frequency	3	1	4	5	3	8
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Qhayanas and Yacuiba show different patterns of effectiveness in market articulation between 2008 and 2011. In Qhayanas both the participating and non-participating families report lower levels of market linkages in 2011 in comparison to 2008. In contrast, participating and non-participating families in Yacuiba report higher levels of effectiveness.

The contrasting outcomes of use of influence and exercise of choice in Qhayanas and Yacuiba have also been influenced by climatic conditions and production. Historic climatic data presented in Table 3.6 and Table 3.8, show the occurrence of two dry years in 2008 and 2010 in both study sites. A lower than average rainfall implies a general reduction of production levels. Qhayanas being a region of subsistence agriculture, there remains few possibilities of market linkage. In the case of Yacuiba, this reduction in production implies an increase in prices, giving way to better negotiation outcomes.

Figure 5.17 Qhayanas: Perception of Outcomes from choice making in Market Services



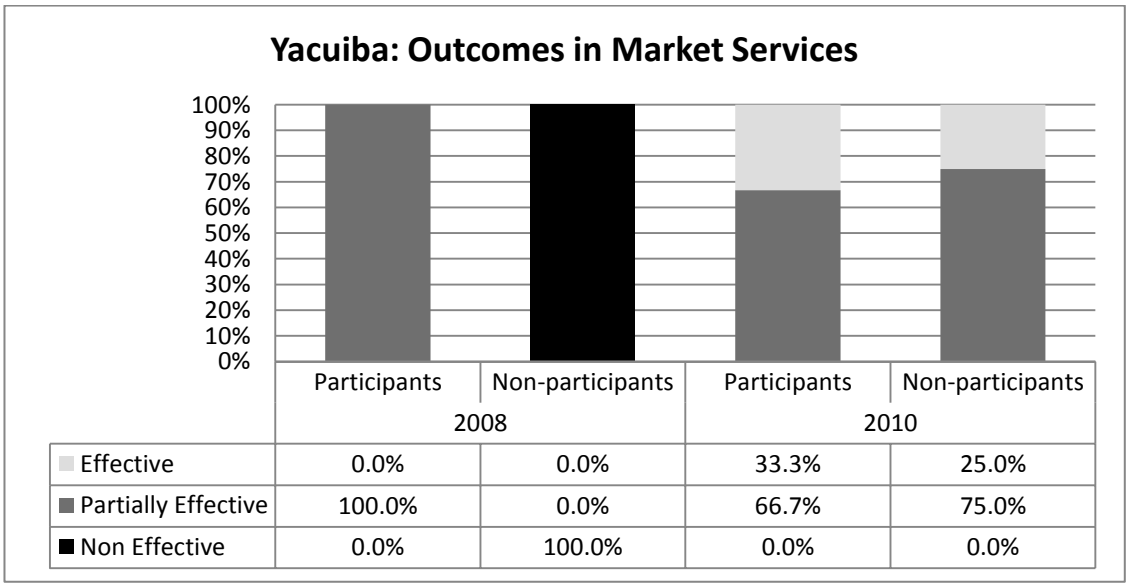
	2008 Participants	2008 Non-participants	2011 Participants	2011 Non-participants
Effective	25.0%	66.7%	0.0%	16.7%
Partially Effective	37.5%	0.0%	42.9%	50.0%
Non Effective	37.5%	33.3%	57.1%	33.3%

In addition to the climatic conditions and productivity, there are important historic and cultural differences related to the market orientation of both sites, which influence the outcomes in relation to market services. In Qhayanas during the pre-Hispanic period and early Spanish rule, marketing was dominated by barter in the form of gift exchange (See Table 4.3). Although currency was introduced during the Spanish rule, trade persisted and can still be found in some areas today. Due to low productivity and limited support from the central government for agricultural development and innovation, farmers have little physical access to markets and have not developed abilities to negotiate. Furthermore, those who produce surplus and sell it are usually observed by the community to share the benefits (See Quote 12; a situation that discourages entrepreneurship. This "sharing" culture comes from Pre-Hispanic periods when smaller elites controlled the land and were expected to share part of the benefits and provide for the community as a whole (See 4.1.2.1 sub section vi).

Quote 12. *My husband had to quit his job in the city. He inherited his father's land and this year he was elected as authority. He will assume office next month. It is expensive to be an authority. People expect you to share what you have. You have to carry a bag of coca leafs all the time and people that see you come forward to ask for some. My husband will not be able to work in the city this year, he will receive some help for agricultural production but it is not the same … (when asked if election was not by turn)… yes it is by turn but somehow you get the turn when you are better off. The community authority is by turn, usually, but the ones that represent the Ayllu and higher levels are usually elected from those who are doing well, those that have been authorities before and are leaders. (Female approximately 27 years old. She did not belong to the community but married in with a member)*

The historic and cultural background in Yacuiba is completely opposite to that of Qhayanas. In Yacuiba traits of individualism persist since Pre-Hispanic times (See Table 4.12). Additionally there has been support for the market economy since the late republican period (See section 4.1.2.4). This promotion of staple crops and market economy came along with road construction and other market services that enable farmers to achieve effective outcomes when their capacities to negotiate are strengthened.

Figure 5.18 Yacuiba: Perception of Outcomes from choice making in Market Services



	Participants 2008	Non-participants 2008	Participants 2010	Non-participants 2010
Effective	0.0%	0.0%	33.3%	25.0%
Partially Effective	100.0%	0.0%	66.7%	75.0%
Non Effective	0.0%	100.0%	0.0%	0.0%

5.2.4 Market Services: A combined empowerment perception

Combining the different variables used to understand and describe the perception of empowerment, a general empowerment level variable was created for the market services domain (See Appendix 6). This variable summarises opportunity, praxis and outcome in market services. Results were aggregated and grouped in a three level scale of

Disempowerment, Partial Empowerment and Full Empowerment. Table 5.10 shows the results for both study sites.

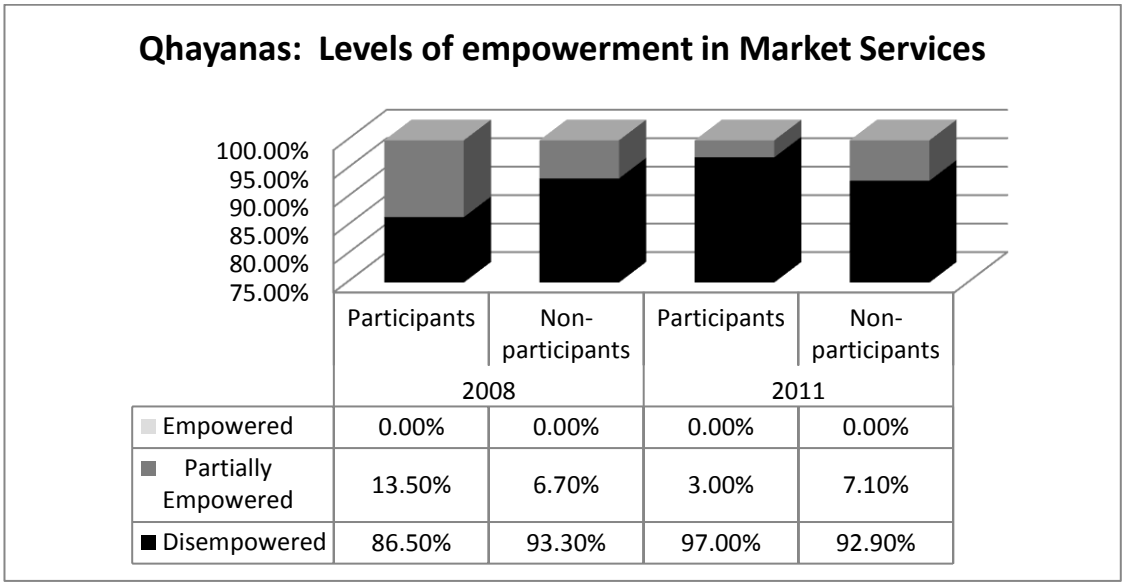
Table 5.10 Levels of empowerment perceived in market linkages

Region	Level of Empowerment	Unit	2008		Total 2008	2011		Total 2010
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Disempowered	Frequency	32	28	60	32	26	58
		%	86.5%	93.3%	89.6%	97.0%	92.9%	95.1%
	Partially Empowered	Frequency	5	2	7	1	2	3
		%	13.5%	6.7%	10.4%	3.0%	7.1%	4.9%
	Fully Empowered	Frequency	0	0	0	0	0	0
		%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total by Region	Frequency	37	30	67	33	28	61
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yacuiba	Disempowered	Frequency	18	19	37	23	24	47
		%	90.0%	100.0%	94.9%	85.2%	88.9%	87.0%
	Partially Empowered	Frequency	2	0	2	4	3	7
		%	10.0%	0.0%	5.1%	14.8%	11.1%	13.0%
	Fully Empowered	Frequency	0	0	0	0	0	0
		%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total by Region	Frequency	20	19	39	27	27	54
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

In the Qhayanas region the sense of empowerment in relation to market linkages has decreased in the participant group from 2008 to 2011. In 2008, 86.5% of the participants sensed disempowerment with regards to market linkages and interaction and 13.5% felt partially empowered. In 2011 the participants who sensed disempowerment rose to 97% with only a 3% of them reporting a sense of partial empowerment. The non-participant group however shows minimum changes between 2008 and 2009 (See Figure 5.19).

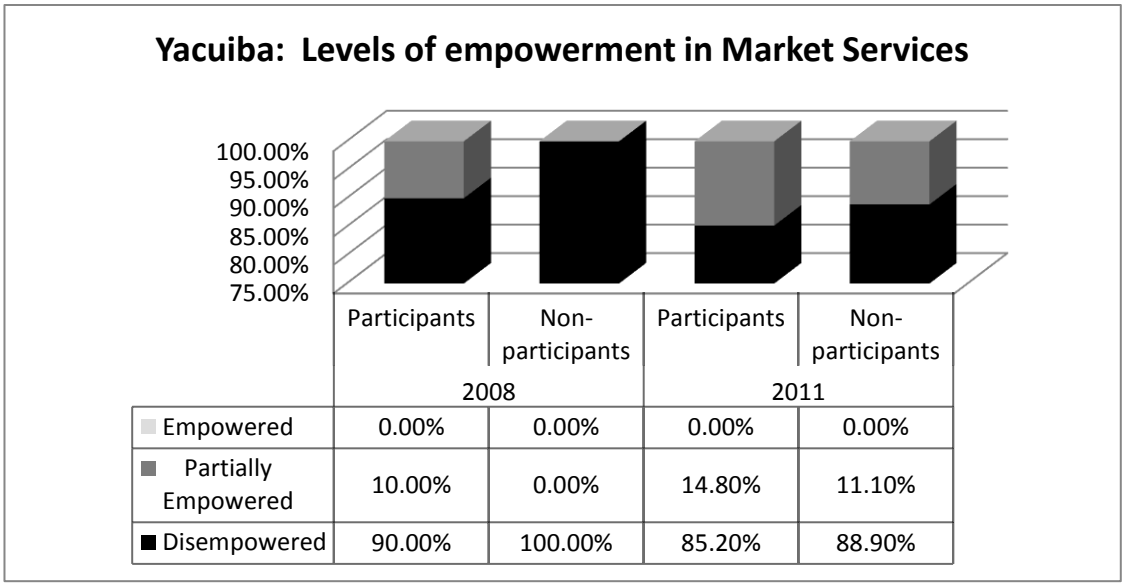
The Yacuiba case shows different results since in both the participant and non-participant groups the general level of empowerment perceived in market linkages rose between 2008 and 2011. These changes are more substantial in the non-participant group where the sense of empowerment rose from total disempowerment towards partial empowerment in 11.1%, while the participant group experienced the same change only in 4.8% (See Figure 5.20)

Figure 5.19 Qhayanas: Levels of empowerment perceived in market services



	2008		2011	
	Participants	Non-participants	Participants	Non-participants
Empowered	0.00%	0.00%	0.00%	0.00%
Partially Empowered	13.50%	6.70%	3.00%	7.10%
Disempowered	86.50%	93.30%	97.00%	92.90%

Figure 5.20 Yacuiba: Levels of empowerment perceived in market services



	2008		2011	
	Participants	Non-participants	Participants	Non-participants
Empowered	0.00%	0.00%	0.00%	0.00%
Partially Empowered	10.00%	0.00%	14.80%	11.10%
Disempowered	90.00%	100.00%	85.20%	88.90%

To understand the results presented in this section three situations must be taken into consideration. The first is the fact that naturally due to the environment and the actual government and service structures, there are more market opportunities in Yacuiba in comparison to Qhayanas. The second is that the innovation projects were different in both cases with the Yacuiba case focusing more on market products such as groundnuts and maize while the Qhayanas case took a broader potato-based system approach. Thirdly, the Qhayanas case reported fewer difficulties throughout its operation, while in Yacuiba conflict

arose out of demands formulated by farmers regarding issues of equipment and technical assistance.

In the Qhayanas case it is arguable that although farmers were able to learn some new processing techniques and negotiation practices, the lack of surplus production and permanent opportunities restrain their possibilities of market interaction. Additionally, history and culture have established norms and structures and strengthened practices that foster collectivism and discourage entrepreneurship. The capacity built leaves a sense of frustration that is reflected in a perception of lower levels of empowerment. To return to the example given at the beginning of this chapter, this is similar to what would happen if technical assistance for agricultural production would be promoted, while in the end farmers would be restricted in their use and exercise of new knowledge. This is supported by the fact that in the non-participant group this sense of lower empowerment is of a lesser magnitude.

The results for the Yacuiba case show that when there are structural possibilities to enable market linkages the sense of empowerment achieved will rise. The skills developed by the participating group make them more aware of the structural restrictions to market access, thus creating a lesser sense of empowerment in comparison to the non-participating group. For the latter, the new marketing experiences enhance their sense of empowerment as they are less aware of the structural restrictions.

This chapter has presented a detailed description of the sense of empowerment at different levels (opportunity, praxis and outcome) in addition to an aggregated perception of levels for both the Agricultural and Development, and the Market Services Domains. Some elements of history and culture have been brought in to enhance the analysis. Nevertheless, this sense of empowerment is also influenced by a series of other elements. Chapter 6 will elaborate on elements of agency and structure that influence empowerment.

5.3 Integrating perceptions of empowerment

The data collected in Qhayanas and Yacuiba shows that farmers feel less empowered in terms of agriculture and development in 2011 in comparison to 2008, being this sense of disempowerment greater in Qhayanas than in Yacuiba. There is also a difference between types and levels of empowerment perceived in every region.

In Qhayanas farmers perceive that spaces for decision making in the provision of general and agricultural services have declined being these decline perceived in greater magnitude by the participating group. The use of these spaces and the outcomes of interaction have also experienced a similar trend for both the participant and non-participating groups of Qhayanas. The combined analysis of opportunity, praxis and outcome, for each individual farmer, shows that there is an additive effect being the sum greater the individual measures. This means that although individual farmers may experience a decline in one or more of these levels most experience a decline in all of them, with a lower sense of empowerment in comparison to the initial stage.

Informal conversations with local farmers reveal that after an initial period of project operation in 2008 there was great expectation on the alternative solutions proposed by the project. People were aware of their limitations in terms of connectivity and availability of external goods and continued on the same dynamic as the only known way of life. In 2011 when the project had ended there was much more awareness of services such as education and health. People knew that they could and should be involved in the decision making of these services. Some farmers were aware of the possibility of accessing funds from the local municipal government for agricultural purposes.

Previously farmers rarely expressed content or discontent regarding any initiative (Polar et al., 2011a), acting as passive receivers. After being involved in the performance evaluation of the NGO field staff and the execution of project activities, farmers became more aware of importance of being part of the decision making process. Nevertheless, when the project ended these spaces for participation in decision making were greatly reduced. Even though the national "Popular participation Law" opens the space for local involvement in evaluation and decision making, this has not been fully exploited by farmer organizations. While there is a strong historic and cultural tradition of organization through the Ayllu (See sections 4.2.3 and 4.3.1), its rather political nature has acted as a bottle neck for the development of the agricultural sector. The awareness of further possibilities and the perception of structural organizational constrains is reflected in lower levels of empowerment perception, being these awareness greater and the sense of empowerment lower particularly for the participating group in Qhayanas.

In Yacuiba the sense of empowerment is lower in the participant group than in the non-participant group. The project worked with the participating group to establish a participatory

system to assess and strengthen project operation. This system provided feedback to technical staff and enhanced the service during the initial stages of project operation, yet as greater self-confidence was developed farmers became more demanding on the commitments assumed by the project implementers and funding institutions.

When compromised equipment for the transformation[125] of maize became due, farmers began complaining and demanding that deadlines and specifications be met. Initially the participatory method provided was used and evaluation forms were filled requesting NGO field staff to produce the negotiated equipment, yet the local Departmental Government delayed the funds for several months. When finally in May 2009 the equipment was bought and its hand over was attempted, farmers refused to accept the equipment pointing out that it did not meet the specified technical requirements and gave the manufacturer and participating institutions time to correct these differences (Polar et al., 2011a).

The equipment was finally handed over in lesser number but with the required specifications, the long waiting and continuous unfruitful interactions discouraged many participating farmers that ceased their involvement with the project. Project staff found difficulties in meeting the expected number of project participants and changed the system of interaction from personalized technical assistance to group interaction thus reaching both some participants and many new non-participating farmers (Cruz V., 2010). This unexpected change in the operation of the project is also reflected in the data on empowerment perception, were participating farmers feel less empowered in 2011 than in 2008, yet there is a large increase in the general empowerment perception by non-participating farmers.

In the non-participating group people feel the conclusion of the project as a reduction in 'Opportunities' to exercise of choice or influence (L1 Agriculture, L1 General). This reduction in opportunities affects them in different ways. Some feel that the actual exercise of choice has been reduced by the closure of the project, while others feel that it increases with new projects and institutions that come in the region and in which they are able to participate. Ultimately, there is more 'Praxis' and more farmers exercising choice. Although the outcome of this praxis is not always fruitful, the larger number of farmers achieving some positive 'Outcomes' produces in them a higher sense of empowerment. The non-participating group in Yacuiba is a "free rider" that did not have to endure the tedious negotiation process with the

[125] Equipment compromised for maize were 40qq silos, crushers, bag sewers, sealers, scales, fractioning scales, peelers, mixers and grain cleaners.

Departmental Government yet benefitted of the enhanced equipment and technical assistance services provided, thus feeling more empowered than the participating group.

Table 5.11 General overview of changes in empowerment perceptions in agriculture and development between 2008 and 2011

Level of Empowerment	Qhayanas		Yacuiba	
	Participants	Non-Participants	Participants	Non-Participants
Opportunity in Development	- -	-	- -	- 0 +
Opportunity in Agriculture	- -	-	- - -	- - -
Opportunity in General	- - -	- -	- - -	- - -
Praxis in Agriculture	- - -	- - -	- - -	- 0 +
Outcome in Agriculture	- -	- -	- (0) +	- (0) +
Combined Perception	- - -	- - -	- - -	+ + +

(+) an increase of less than 5% towards higher ranks
(++) an increase between 5 - 20% towards higher ranks
(+++) an increase above 20% towards higher ranks
- (0) + convergence towards central ranks
(-) a reduction of 5% from higher ranks
(- -) a reduction between 5 - 20%from higher ranks
(- - -) a reduction above 20% from higher ranks
(=) no changes
(- 0 +) flow towards extreme ranks

Both the interventions in Qhayanas and in Yacuiba had market linkage components. The changes in perception between 2008 and 2011 show a general sense of disempowerment in Qhayanas and the achievement of a sense of empowerment in Yacuiba.

In Qhayanas the marketing component of the project attempted to provide market opportunities for surplus production of potatoes and other biodiversity products. During 2008 and 2009 farmers learnt about market opportunities and negotiation, they participated in local fairs and were able to sell some of their surplus production. This initial success achieved by the participating group along with credit opportunities offered by the organization encouraged non-participants to join in the organization. In 2010 a severe drought and frost during critical periods (See Table 3.6) reduced surplus production and frustrated further market linkages. For this reason, although non-participating farmers report a positive increase in market linkage initiatives where they exercised choice and influence, they later report a reduction in the positive outcomes of these market interactions, as do the participants. In general, the main restriction to empowerment in the market sector is the availability of surplus production since

most market demand is large in volume and unreachable with the current levels of production (Jarro, 2010).

In Yacuiba, both participating and non-participating farmers perceive higher empowerment levels in 2008 in comparison to 2011. Despite the difficulties encountered by the project due to the delay in provision of maize processing equipment, market opportunities were high if farmers would be able to organize themselves adequately. In addition, the dryness of the 2010 year produced an increase in the prices of corn and groundnuts, thus enabling better prices for their produce. In contrast to Qhayanas, in Yacuiba the availability of surplus from a staple crop with high market demand has been positively capitalized by the market linkage initiatives introduced by the project. This produced in participating and non-participating farmers a sense of enhanced empowerment within the market sector.

Table 5.12 General overview of changes in empowerment perceptions in market linkages between 2008 and 2011

Level of Empowerment	Qhayanas		Yacuiba	
	Participants	Non-Participants	Participants	Non-Participants
Opportunity in the Market	-	-	- -	- -
Praxis in the Market	-	+ +	+	+
Outcome in the Market	- - -	- - -	+ +	+ + +
Combined Perception	- -	-	+	+ +

(+) an increase of less than 5% towards higher ranks
(++) an increase between 5 - 20% towards higher ranks
(+++) an increase above 20% towards higher ranks
- (0) + convergence towards central ranks
(-) a reduction of 5% from higher ranks
(- -) a reduction between 5 - 20%from higher ranks
(- - -) a reduction above 20% from higher ranks
(=) no changes
(- 0 +) flow towards extreme ranks

The sense of empowerment experienced and reported by farmers in agriculture and market issues is also related to other structure and agency variables. The following chapter will present changes in structure and agency variables, relating them to the perceptions of empowerment presented in this chapter.

Chapter 6. MANIFESTATIONS OF AGENCY AND STRUCTURE

This chapter presents results on the evaluation of variables of structure and agency that influence the empowerment of farmers. Its objective is to depict how the exercise of participation through the application of the participatory method has affected variables of agency and structure as components of empowerment, and the differential effects in both contrasting study sites. The information presented follows the evaluation matrix presented in the methodological framework, for research question number two "What is the effect of participation through SEP on structure and agency as components of empowerment within the agricultural technology innovation sector, in two contrasting sites of Bolivia?" (See Table 3.2).

The first section of this chapter presents agency at the individual level. This section elaborates on variables that have an effect on the individual's possibility of action and social change. The second section presents agency at the collective level through variables that influence the possibility of group action to produce social change. The third section presents data on structure variables, as factors over which individuals do not have much control, yet restrict or enable their actions. Changes registered between 2008 and 2011 are analysed to understand the influence of the participatory method in the process. The final section of this chapter brings together the different groups of variables to aid a general analysis and discussion around changes in structure, individual agency and collective agency. Throughout the chapter insights from Chapter 4 on History and Culture are brought in to enlighten the analysis and illustrate trends and highlight changes to historic and cultural patterns.

6.1 Agency at the individual level

To analyse agency at the individual level several asset base components were considered (See Table 2.3). These components include psychological, information, material, financial and human assets. This section describes and compares the situation of each component of individual agency in 2008 and 2011 for each case study.

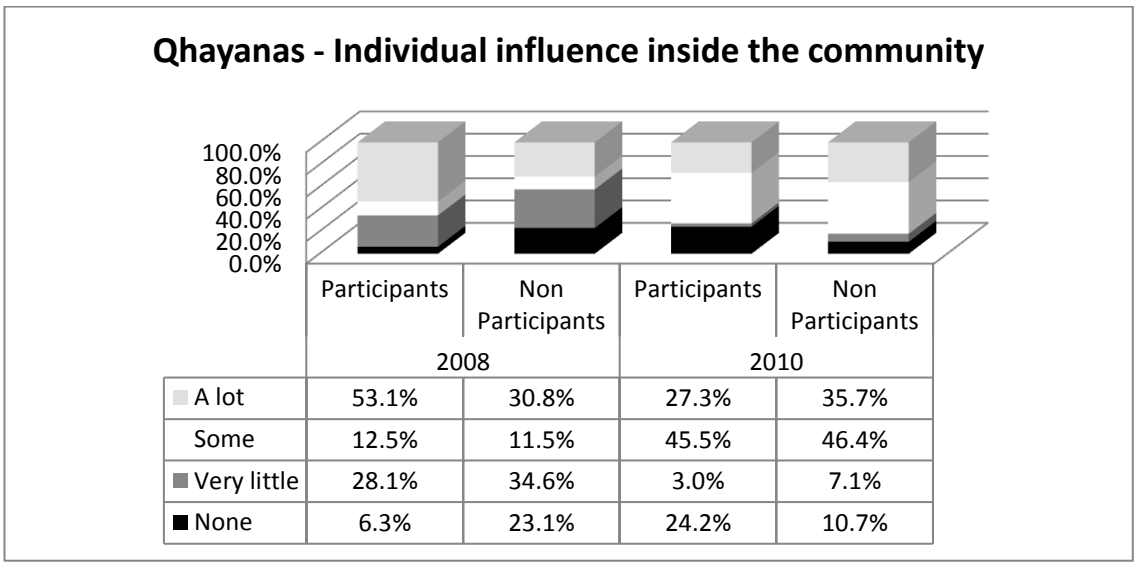
6.1.1 Psychological assets

Psychological assets in this study include elements of self-esteem and self-worth (See section 2.3.4.2 and Table 2.3), evaluated through survey information on the perception of influence

held by individuals regarding themselves inside and outside the community (See question 24 in Appendix 1). Perceived influence was evaluated at four levels: None, Very Little, Some and A lot. In general, this perception has changed between 2008 and 2011 in both sites. The trend is towards lower levels of influence perceived by the participants and higher levels perceived by the non-participants. Consolidated information on the perception of influence inside and outside the community can be found in Appendix 5. 1 and Appendix 5. 2, with data from both study sites.

The loss of influence is more evident inside the community (See Figure 6.1) for the Qhayanas case, where only 6.3% of farmers perceived themselves as having no influence inside the community in 2008, and up to 24.2% had this same perception in 2011. This had much to do with internal relations and the affiliation of participating farmers to the producer association which generated envy and distrust among members, impacting negatively on the image of participating farmers (See Quote 7). Envy and distrust are common manifestations when the harmony of the group is altered. This alteration of harmony becomes more evident in Qhayanas because it is a collectivistic society that has maintained this cultural trait throughout history (SeeTable 4.7).

Figure 6.1 **Qhayanas - Perception of influence expressed by individuals regarding themselves inside the community**



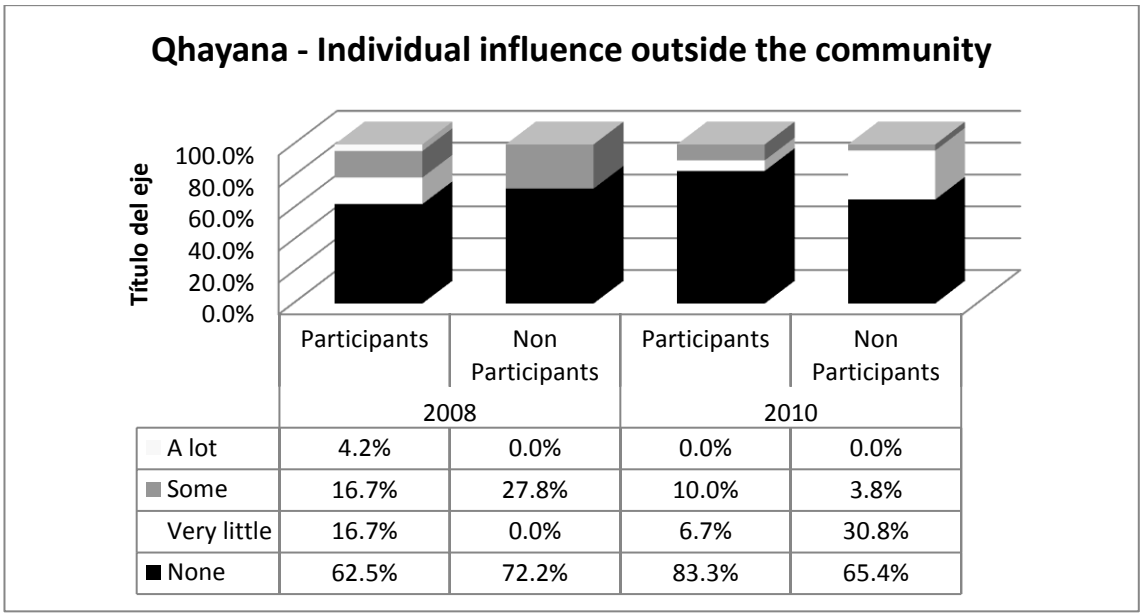
	2008		2010	
	Participants	Non Participants	Participants	Non Participants
A lot	53.1%	30.8%	27.3%	35.7%
Some	12.5%	11.5%	45.5%	46.4%
Very little	28.1%	34.6%	3.0%	7.1%
None	6.3%	23.1%	24.2%	10.7%

The perception of influence outside the community is generally lower than inside the community mainly due to the collectivistic trait where farmers feel protected and valued when they are part of the group and in the community (See Quote 13). Figure 6.2 shows a reduction in the perception of influence outside the community by the participating group. The number

of participating farmers perceiving no influence outside the community changed from 62.5% in 2008 to 83.3% in 2011. Similarly, while 4.2% of participating farmers perceived themselves as having a lot of influence outside the community in 2008, in 2011 no one reported such level of influence.

Quote 13. *(When asked why she thought migrants came back and hosted parties) You have to respect your community it is your root. Only here in the community people know you and you are important. When they come back it means they value their community, they share their success by hosting the community yearly celebration and people recognize this. (Female approximately 40)*

Figure 6.2 **Qhayanas - Perception of influence expressed by individuals regarding themselves outside the community**

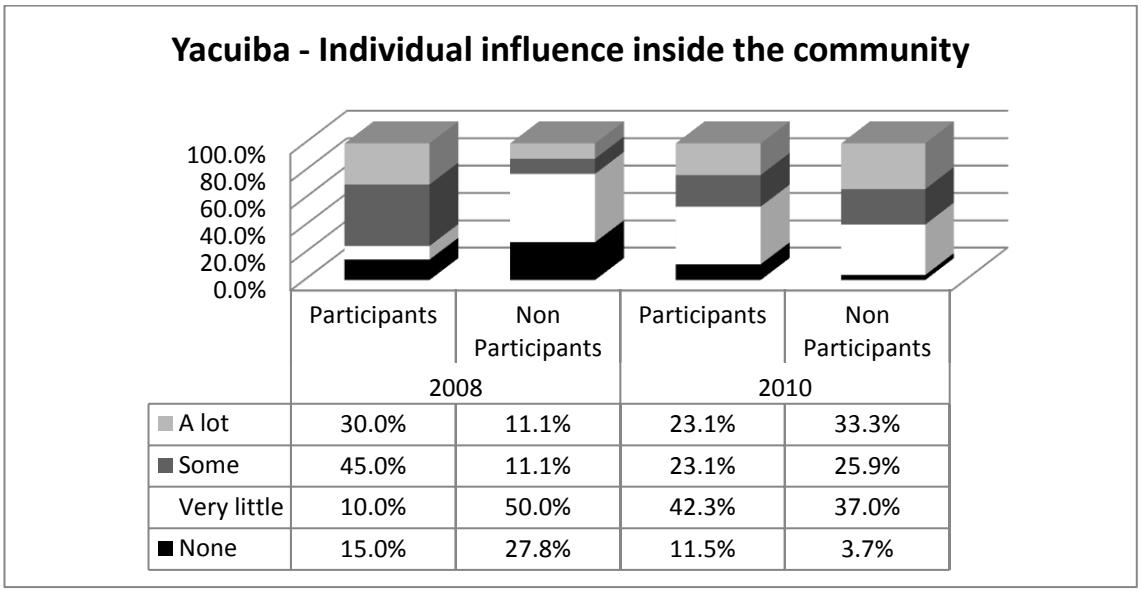


	2008		2010	
	Participants	Non Participants	Participants	Non Participants
A lot	4.2%	0.0%	0.0%	0.0%
Some	16.7%	27.8%	10.0%	3.8%
Very little	16.7%	0.0%	6.7%	30.8%
None	62.5%	72.2%	83.3%	65.4%

Non–participating farmers from Qhayanas followed a different trend reporting a general increase in perceived influence inside the community. The perceived influence outside the community fluctuated toward intermediate levels of influence.

In Yacuiba participating farmers experienced lower levels of perceived influence in 2011 in comparison to 2008. Non-participating farmers on the other hand experienced higher levels of perceived influence in 2011.

Figure 6.3 **Yacuiba -Perception of influence expressed by individuals regarding themselves inside the community**

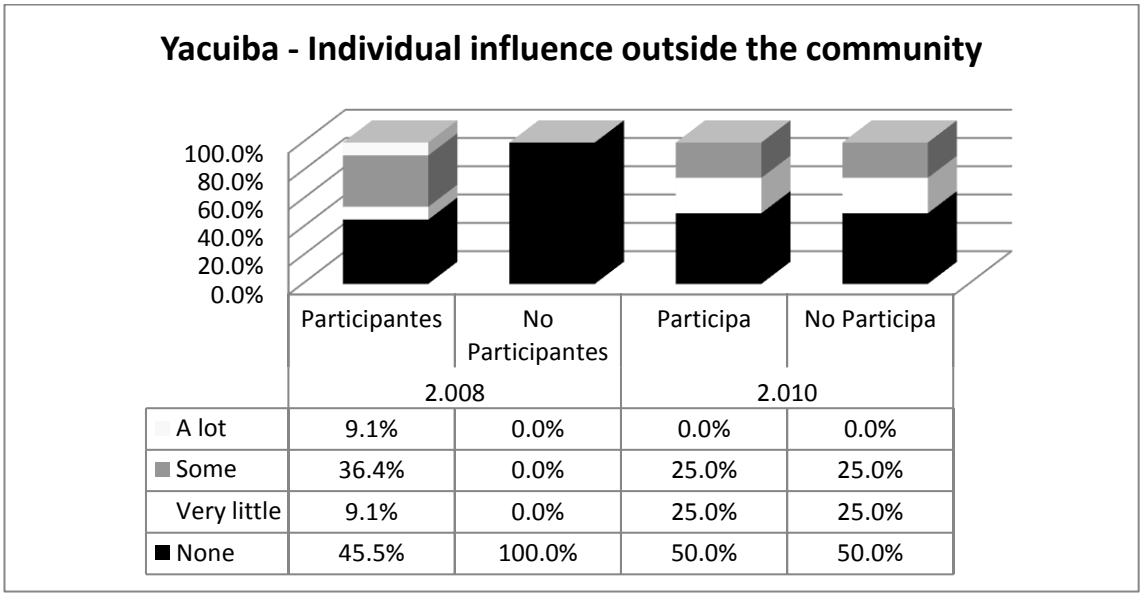


	2008		2010	
	Participants	Non Participants	Participants	Non Participants
A lot	30.0%	11.1%	23.1%	33.3%
Some	45.0%	11.1%	23.1%	25.9%
Very little	10.0%	50.0%	42.3%	37.0%
None	15.0%	27.8%	11.5%	3.7%

The lower levels of influence perceived by participating farmers in Yacuiba both inside and outside the community in 2011, have to do with the fact that participating farmers exercised their choice and demanded better services, yet these were not addressed adequately, thus causing a loss of faith in their degree of influence both outside and inside the community (See Quote 14). Furthermore, the non-participating group in Yacuiba joined in at the end of the intervention, did not participate full, yet benefited from equipment and capacity building offered by the project, thus creating a sense of enhanced influence both outside and inside the community.

Quote 14. *When the project came all the activities were planned together with us. We had to receive technical assistance and some equipment, but the equipment didn't arrive. We complained to the technician that was assigned to our community but it didn't work. Then we went to talk to the coordinator in PROINPA and he told us it was the regional government that did not disburse the funds. We went to the regional government to complain but the equipment did not arrive on time. It came over a year late and on top of it did not meet the technical specifications; it was not what we asked for. We are still trying to get them to change this but they don't listen. (Male approximately 50)*

Figure 6.4 Yacuiba - Perception of influence expressed by individuals regarding themselves outside the community



	Participantes	No Participantes	Participa	No Participa
	2.008		2.010	
A lot	9.1%	0.0%	0.0%	0.0%
Some	36.4%	0.0%	25.0%	25.0%
Very little	9.1%	0.0%	25.0%	25.0%
None	45.5%	100.0%	50.0%	50.0%

6.1.2 Information assets

Changes in information assets are included as part of the evaluation, considering that better choices are made when people can access information. Information assets include access to communication and access to transportation. The following two sections present a detail of access to communication and transportation in both study sites.

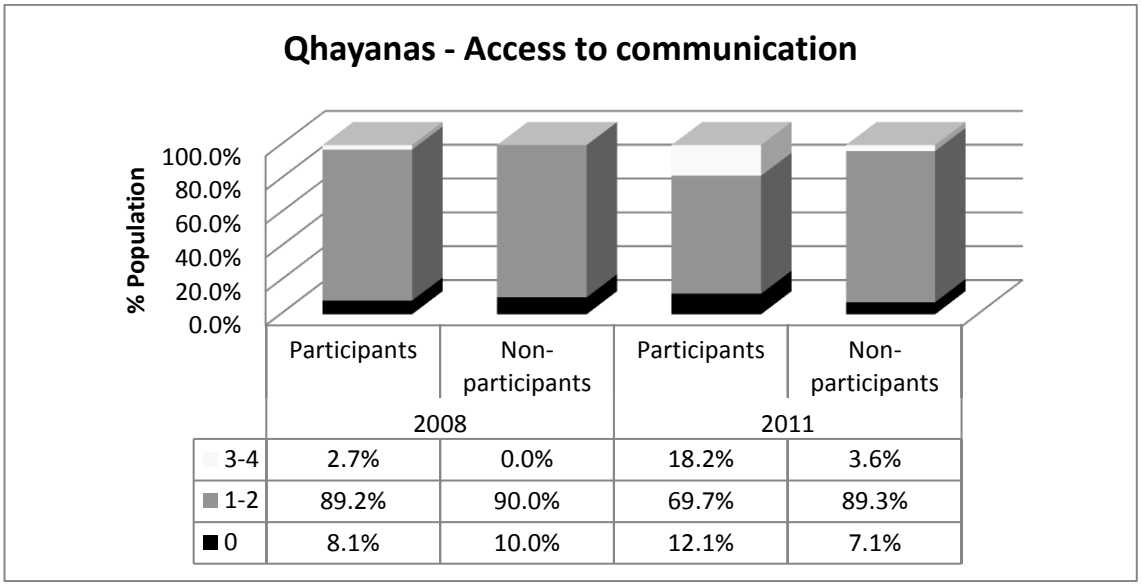
6.1.2.1 Access to communication

To understand changes in access to communication, availability of radio, telephone, cellular phone and television were evaluated and aggregated into three levels: No access, some access and high access. No access implies that families reported not having access to any of these communication means, some access when they reported access to one or two of them and high access if they reported access to three or more. Consolidated information on access to communication can be found in Appendix 5.3, with data from both study sites.

In Qhayanas there was a general shift towards higher access to communication (See Figure 6.5). In 2008, only 2.7% of the participating families and none of the non-participating families reported having high access to communication. By 2011 18.2% of the participating families and 3.6% of the non-participating families reported high access to communication. In most communities radio was the most common means of information. The usage of radio has a historic component and was popularized through the local transmissions of the rebellious

outbreaks in the mines of Potosí during the 1970's (Ayma Rojas, 2011). Nowadays most families own a radio and listen to transmissions in local languages during early morning hours.

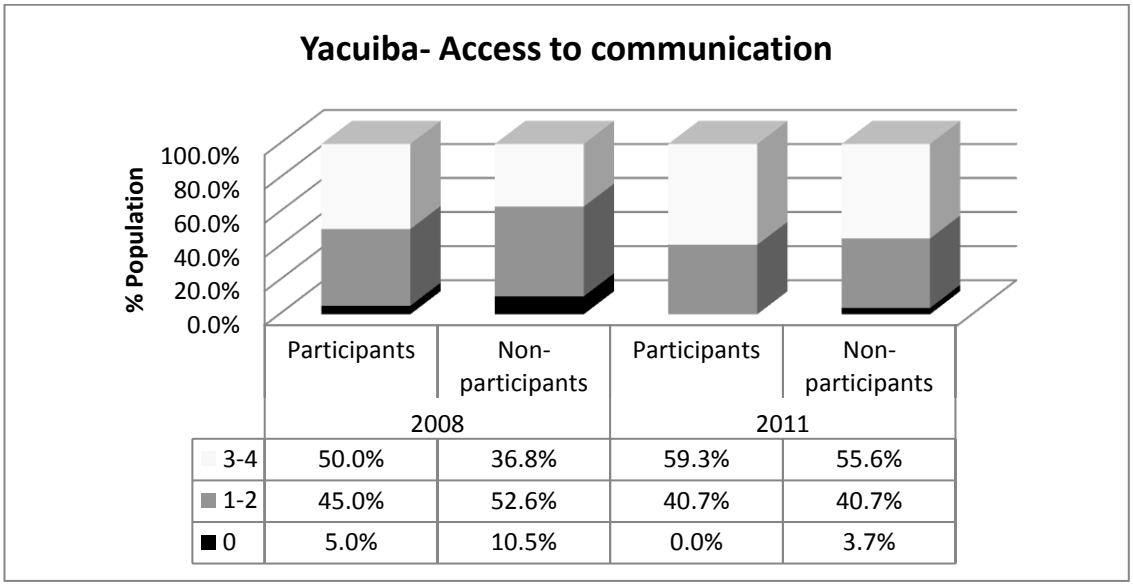
Figure 6.5 Qhayanas – Access to communication



	2008 Participants	2008 Non-participants	2011 Participants	2011 Non-participants
3-4	2.7%	0.0%	18.2%	3.6%
1-2	89.2%	90.0%	69.7%	89.3%
0	8.1%	10.0%	12.1%	7.1%

In Yacuiba access to communication is generally higher than in Qhayanas but the changes experienced are similar to those in Qhayanas, where both the participant and non-participant groups experienced an increase in access to information assets (See Figure 6.6). In 2008, 50% of the participating families and 36.8% of the non-participating families reported having high access to these assets. By 2011, 59.3% of the participating families and 55.6% of the non-participating families reported high access to communication. Access to radio and cellular phone had the highest reports.

Figure 6.6 Yacuiba – Access to communication



	Participants	Non-participants	Participants	Non-participants
	2008		2011	
3-4	50.0%	36.8%	59.3%	55.6%
1-2	45.0%	52.6%	40.7%	40.7%
0	5.0%	10.5%	0.0%	3.7%

To understand changes and clarify attribution, the occurrence of some specific events need to be considered. On May 1st 2008, during the celebration of the National Labour Day in Bolivia, the government of President Morales nationalized "Entel" the national telephone company that had been capitalized by the Italian ETI Euro Telecom International (Government of Bolivia 2008). After the nationalization Entel focused on expanding services to rural areas through the establishment of community based land-lines that operate in remote places with solar panels and antennas for cellular phone coverage. Data show a general increase in the number of people with access to cellular phones in both Yacuiba and Qhayanas, and the availability of land-lines in 2011 where they were non-existent in 2008. Government's efforts to promote communication have also focused on the expansion of television coverage. The national state channel "Bolivia TV" widened its coverage throughout the territory. This is also reflected in the data where more people have access to television in both Qhayanas and Yacuiba in 2011.

Although farmers from Qhayanas and Yacuiba experienced higher levels of access to communication in 2011 in comparison to 2012, this cannot be directly attributed to the project intervention. Contextual information presented in this section shows that government policies and efforts through public sector initiatives have had substantial influence on the outcomes.

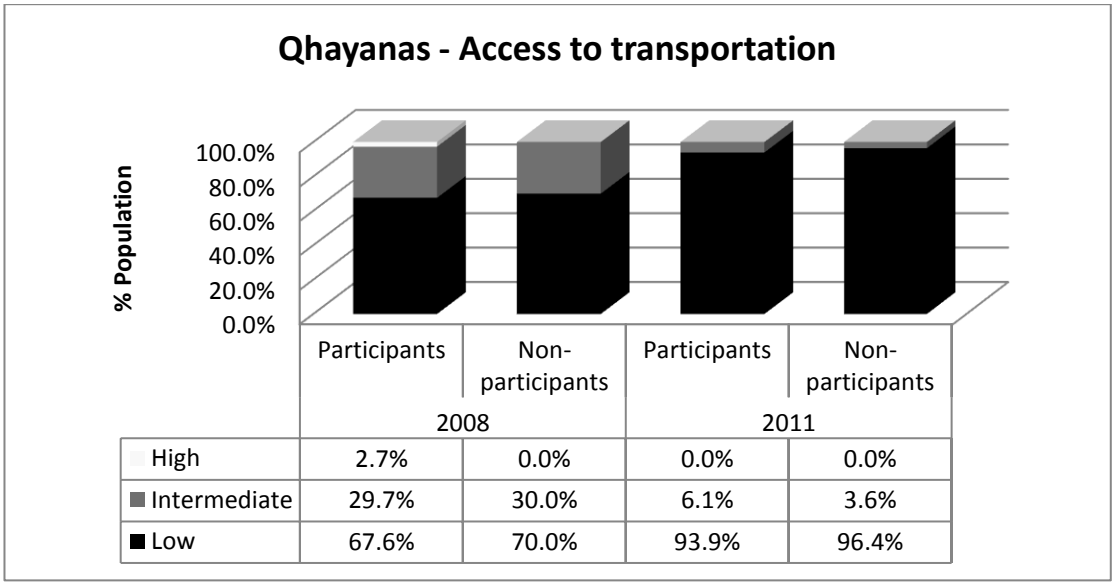
6.1.2.2 Access to transportation

A very important component of communication and information flow among communities in Bolivia is 'word of mouth' through social interaction. Community, local and regional fairs are

used as a means to exchange production, access goods and access first- hand information. For this reason access to transportation was also considered a component of communication assets. To evaluate access to transportation farmers were asked whether they had access to a bicycle, car and daily transport. Through their responses they have reported a general decrease in access between 2008 and 2011 (See Appendix 5. 4 for more detailed data).

In Qhayanas 67.6% of participating families and 70% of non-participating families reported having no access to transportation services in their communities during 2008. By 2011 these numbers rose to 93.9% of the participating families and 96.4% of the non-participating families (See Figure 6.7). Factors influencing this reduction in access can be related to a conflict with smuggled cars in North Potosí. Most by-roads are in precarious conditions and are not used very frequently yet they were commonly used to transport smuggled cars from neighbouring Chile. Some farmers were gradually involved and acquired smuggled cars to aid them in agricultural production activities and transport (Erbol, 2011b). Although their possession was never openly admitted by farmers they gradually reduced the use of bicycles, once a very popular means of transport. The increase in conflict over smuggled cars with local authorities has produced a series of violent clashes where police officers and customs officials were held hostage and some were killed (El Diario, 2010). The use of these smuggled cars has reduced and thus has affected the access to transportation.

Figure 6.7 Qhayanas – Access to transportation

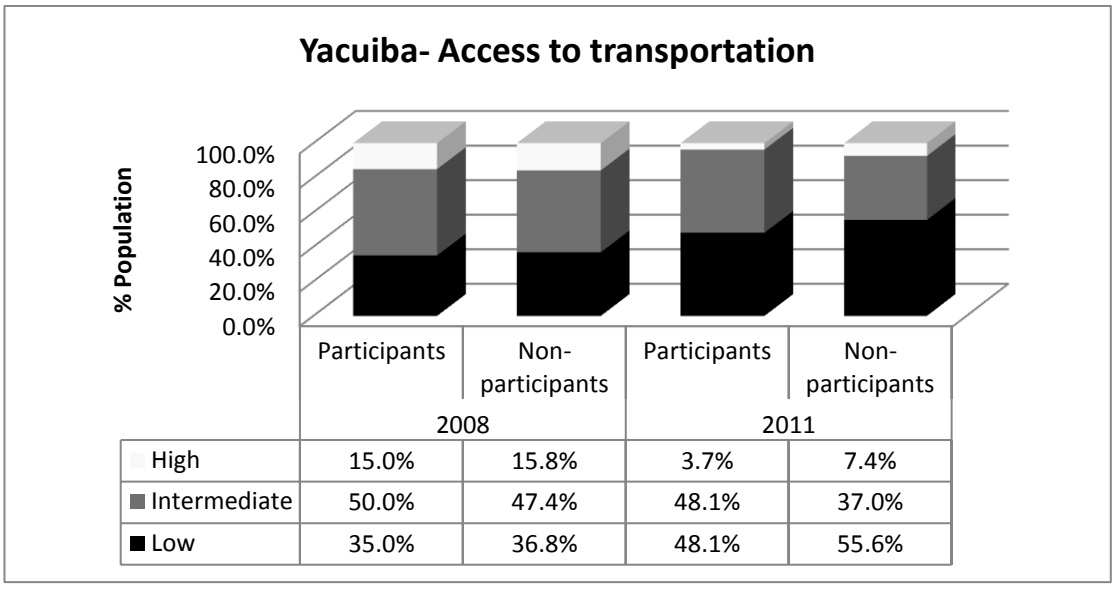


	2008 Participants	2008 Non-participants	2011 Participants	2011 Non-participants
High	2.7%	0.0%	0.0%	0.0%
Intermediate	29.7%	30.0%	6.1%	3.6%
Low	67.6%	70.0%	93.9%	96.4%

In Yacuiba there has also been a reduction in the access to transportation (See Figure 6.8). In 2008, 35% of the participating farmers and 36.8% of the non-participating farmers had no

access to transportation. By 2011 those numbers increased to 48.1% of participating farmers and 55.6% of non-participating farmers. When analysing the data in depth we observe that the number of people accessing bicycles has increased just as the number of people who have access to cars. The main factor that reduced the perception of access to transport is public transport services. Local public transport in Yacuiba is scarce and managed by individual vehicle owners that provide services on demand, yet most of the service provision depends on the conditions of roads. In February 2011 when the data were being collected, the Chaco region was experiencing high volumes of rainfall that seriously restricted access to some communities, thus the perception of low access to transportation.

Figure 6.8 Yacuiba – Access to transportation



	2008 Participants	2008 Non-participants	2011 Participants	2011 Non-participants
High	15.0%	15.8%	3.7%	7.4%
Intermediate	50.0%	47.4%	48.1%	37.0%
Low	35.0%	36.8%	48.1%	55.6%

The information presented above shows that access to transportation in both Qhayanas and Yacuiba experienced a reduction between 2008 and 2011 yet this reduction cannot be directly attributed to the project intervention since both the participating and non-participating farmers reported similar changes. External factors such as the conflict over smuggled cars in North Potosí, private transportation service provision and climatic conditions in Yacuiba, play an important role in the changes reported by farmers.

6.1.3 Material assets

Material assets are productive resources (See Table 2.3) available for farmers. Material assets considered in this study are land tenure, tool ownership and access to durable goods. This

section will elaborate on the changes that took place in both study sites with regards to these three components of material assets.

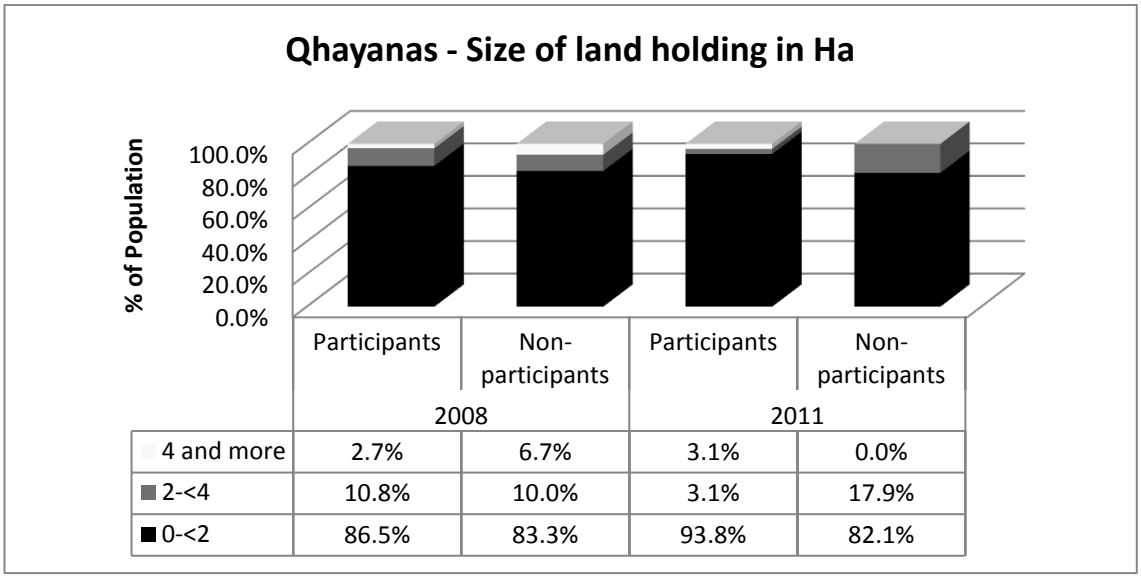
6.1.3.1 Land Tenure

Land tenure reflects on three aspects: size of land (Appendix 5. 5), system of land tenure or holding (Appendix 5. 6), and the holding of irrigated land (Appendix 5. 7). All three aspects in both Qhayanas and Yacuiba have changed between 2008 and 2011.

i. Land Tenure in Qhayanas

In Qhayanas during 2008 86.5% of participating farmers reported having less than 2 ha of land. In 2011 those figures rose to 93.8%. Likewise, in 2008 6.7% of non-participating farmers reported having more than 4 ha and 10% reported having from 2 to 4 has. These figures changed towards a reduction in the size of land since in 2011: none of the non-participating farmers reported having more than 4 ha and 17.9% reported having between 2 and 4 ha. (See Figure 6.6)

Figure 6.9 Size of land holding in Qhayanas



	2008 Participants	2008 Non-participants	2011 Participants	2011 Non-participants
4 and more	2.7%	6.7%	3.1%	0.0%
2-<4	10.8%	10.0%	3.1%	17.9%
0-<2	86.5%	83.3%	93.8%	82.1%

In the Qhayanas case it is important to mention that cultivated or used land size fluctuates from one year to the other. Given the extreme climatic conditions in the region, land is divided into smaller plots called "*mantas*". These *mantas* are cultivated according to the altitude and ecological characteristics through production cycles that last from 5 to 8 years. High altitude plots start the cycle by producing potatoes the first year followed by one or two

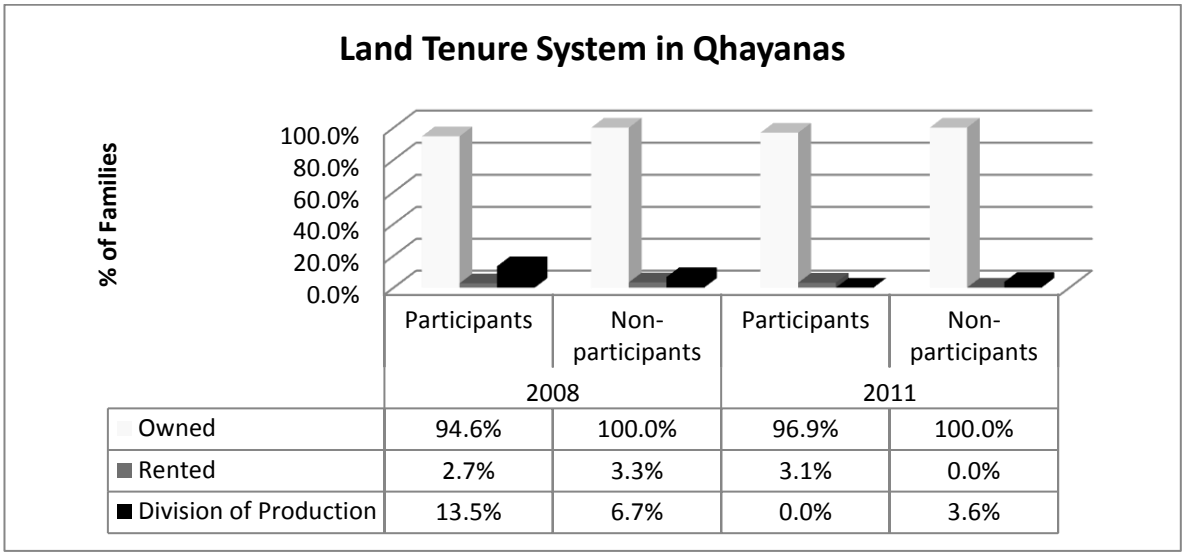
years of grains (barley, oats, other) and 4 or 5 years left fallow. As altitude declines crops and fallow periods change (See section 4.2.1 and Table 4.2). The selection of *mantas* for cultivation is a collective process that takes place every year. It is usually influenced by previous productive cycles, the altitude and productive potential of the plot, the size of the plot and by natural indicators that predict the possible weather conditions for the following year; thus influencing the size of land cultivated every year.

A second factor that relates to the variation in area of land cultivated is the system of land tenure used by farmers (See question 62 in Appendix 1). In parallel to the reduction of land size in Qhayanas, there was a reduction in the area of land cultivated through the system of division of production also called *"al partido"*[126]. Many farmers who own land but cannot cultivate it rent their plots or give part of their land to newcomers or to farmers who have less land to cultivate, under the agreement that they will return half of the production as payment. Some farmers produce under different systems of land tenure. While they hold land of their own to cultivate, when plots are small they tend to rent additional land or work through division or production. Therefore, results from the different land tenure systems add up to more than 100%. Results in this case were analysed considering the proportion of farmers who produce under a particular type of land tenure system, and changes in the percentage of farmers producing under a specific system.

In 2008 13.5% of the participating farmers cultivated part of their land under the division of production system, yet in 2011 none of them cultivated land under this system. The non-participants also experienced a reduction in terms of the usage of division of production system, from 6.7% in 2008 to 3.6% in 2011 (See Figure 6.10)

[126] It is a system of production where someone external provides seeds and input while the other provides the land. Production is split in half between the land owner and the producer.

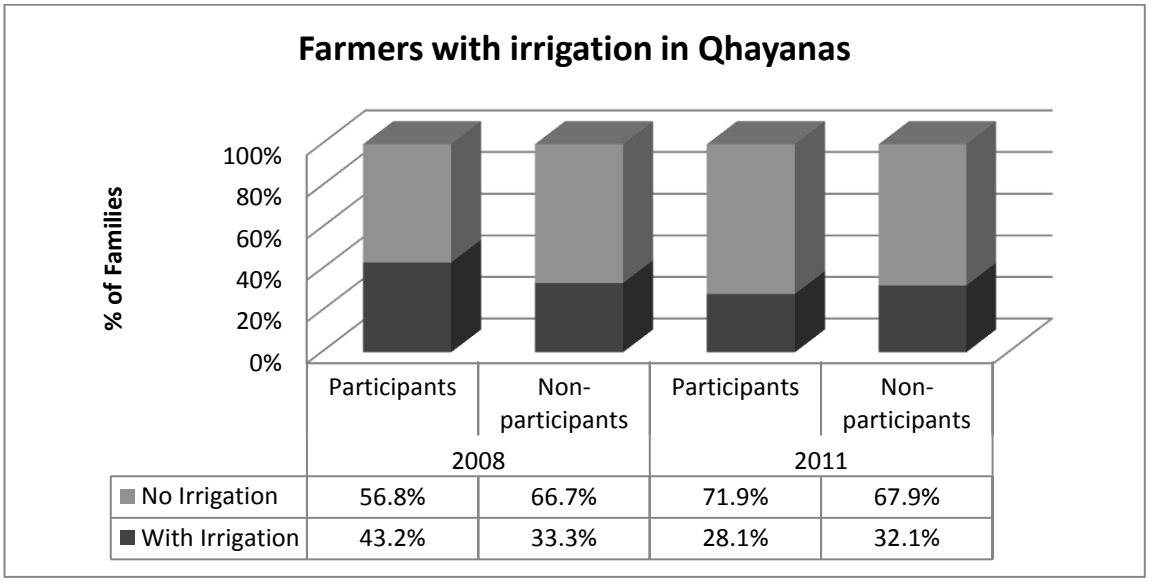
Figure 6.10 Systems of Land Tenure in Qhayanas



Important factors influencing changes in the land tenure system in Qhayanas are the drought experienced during the 2010-2011 agricultural cycle (See Table 3.6), and the increase in mineral prices (See Figure 3.2). It is usually farmers who have smaller plots of land or who do not own any land that are involved in the division of production system. The occurrence of drought reduces production and discourages farmers to get involved in the division of production system. Furthermore, the increase in metal prices raises wages in the mining sector, which encourages farmers, particularly those with less land, to migrate as labourers for mines.

A third factor related to land tenure size and system is the possession of plots of irrigated land since water resources are scarce and may change the productive potential of the land. In Qhayanas, the non-participating group experienced little changes in terms of irrigated land, yet the participants reported having less land irrigated in 2011 in comparison to 2008. Part of this change has to do with the new introduction of small irrigation systems in 2008. Unfortunately the drought experienced during 2010 (See Table 3.6) affected the availability of water for the irrigation systems recently established with participants, as part of the project intervention.

Figure 6.11 Families that report having irrigated land in Qhayanas

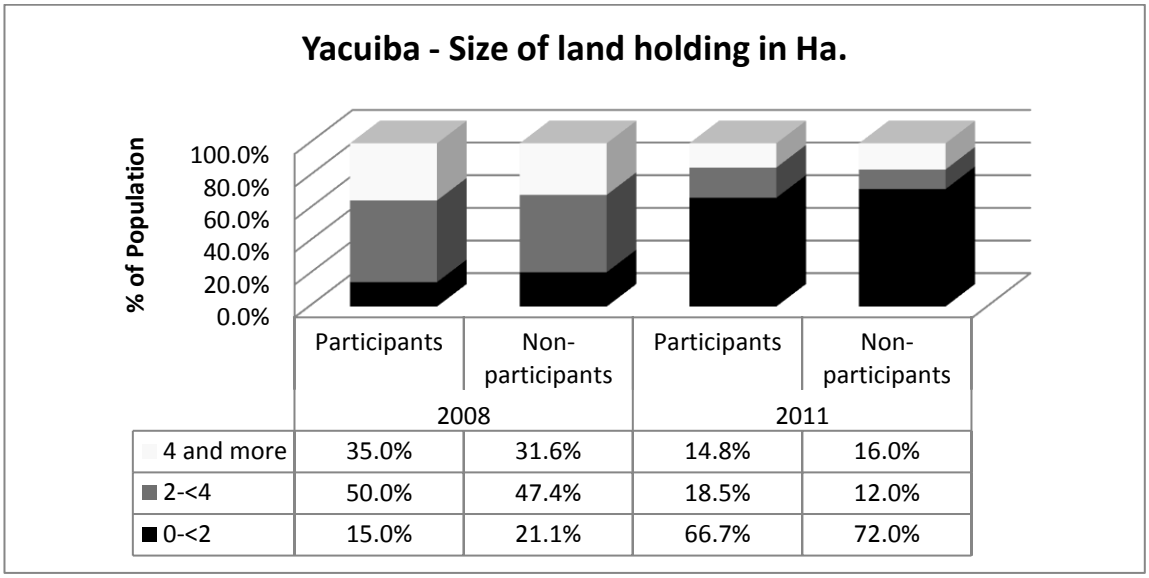


Cultural, climatic and economic factors have influenced land tenure in Qhayanas. Although land tenure is a material asset that influences farmers' perception of empowerment, it is not a factor that can be directly attributed to the project, as there are many other contextual elements that influence it.

ii. Land Tenure in Yacuiba

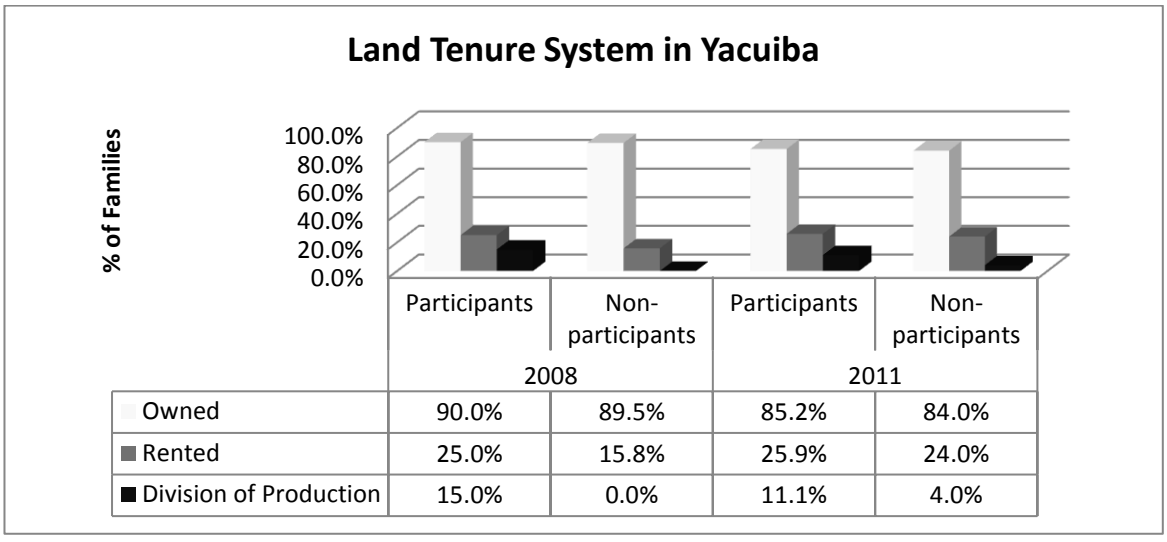
In Yacuiba large reductions in the size of land were reported in 2011 in comparison to 2008. While in 2008 only 15% of participants and 21.1% of non-participants reported having less than 2 ha of land, in 2011 up to 66.7% of participants and 72% of non-participants reported having less than 2 ha of land (See Figure 6.12).

Figure 6.12 Size of land holding in Yacuiba



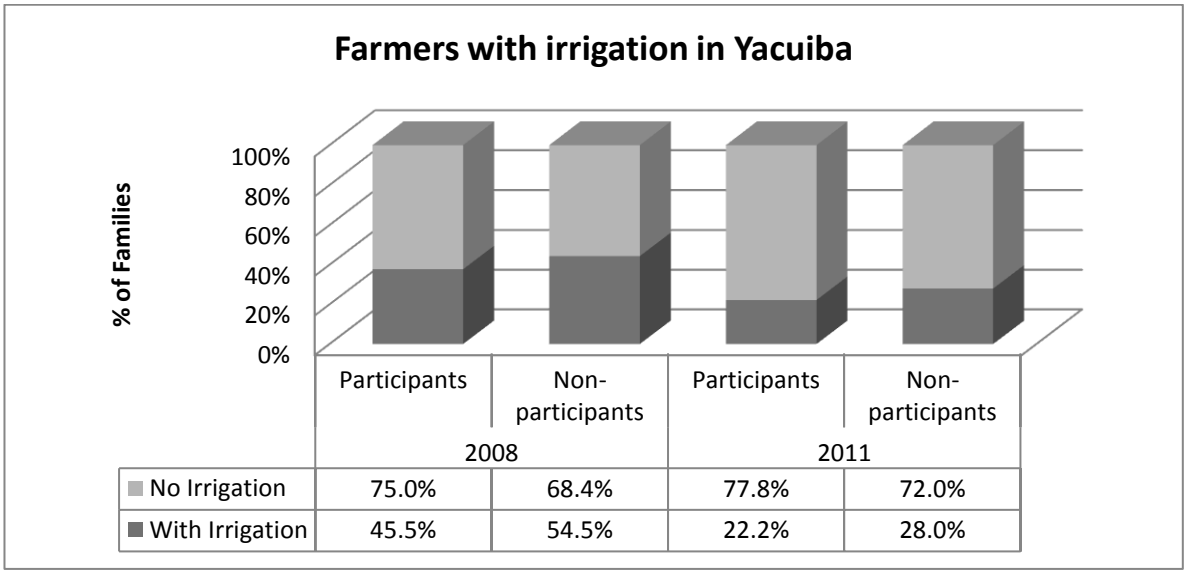
The system of land tenure in Yacuiba experienced small changes from 2008 to 2011 (See Figure 6.13). There was a reduction in the number of farmers who reported owning land for both the participating and non-participating groups. The possession of rented land increased particularly in non-participants.

Figure 6.13 Systems of Land Tenure in Yacuiba



In Yacuiba, there has been a reduction in the number of farmers reporting access to irrigated land in both the participant and non-participant groups (See Figure 6.14). Most of the reduction in irrigated land has to do with the drought experienced during 2010 that reduced the sources of water for irrigation (See Table 2.1).

Figure 6.14 Families that report having irrigated land in Qhayanas



	2008 Participants	2008 Non-participants	2011 Participants	2011 Non-participants
No Irrigation	75.0%	68.4%	77.8%	72.0%
With Irrigation	45.5%	54.5%	22.2%	28.0%

A very important factor influencing data collection was the fear of land encroachment and reversion. Encroachment takes place usually on large states and implies its occupation by landless farmers. Reversion is on the other hand a process initiated by the national government which re-claims land usually of large states that are not fulfilling a socio-economic function according to national regulations. Although considerable effort was made to assure families about the confidentiality of the information collected during the research, fear influenced farmer reports on land tenure, particularly size.

Yacuiba has a diverse historic and cultural background with land tenure rights directly linked to politics as the axis of conflict. Outbreaks of violence linked to agriculture and later to land tenure rights have been present in the region throughout history (See sections 4.1.2.2; 4.1.2.3 - ii and iii; 4.1.2.4 - i; and section 4.4.3). During the early and late republican periods large states proliferated, indigenous farmers were held in conditions of serfdom and smallholders were relegated. Nevertheless, the occupation[127] of large abandoned states by landless farmers since the year 2000 and later processes of land reversion[128] promoted by the state (See section 4.4.3) have influence adequate data collection for this variable.

[127] Encroachment or occupation takes place when landless farmers settle in states that belong to large landowners. These illegal settlements have to go through legal processes to determine ownership over the land.

[128] Land reversion to the government is a legal figure present in the Agrarian Reform Law. This law states that ownership over land is ensured when the land fulfills an acceptable social and economic function. When this function is not fulfilled the land must return to government ownership.

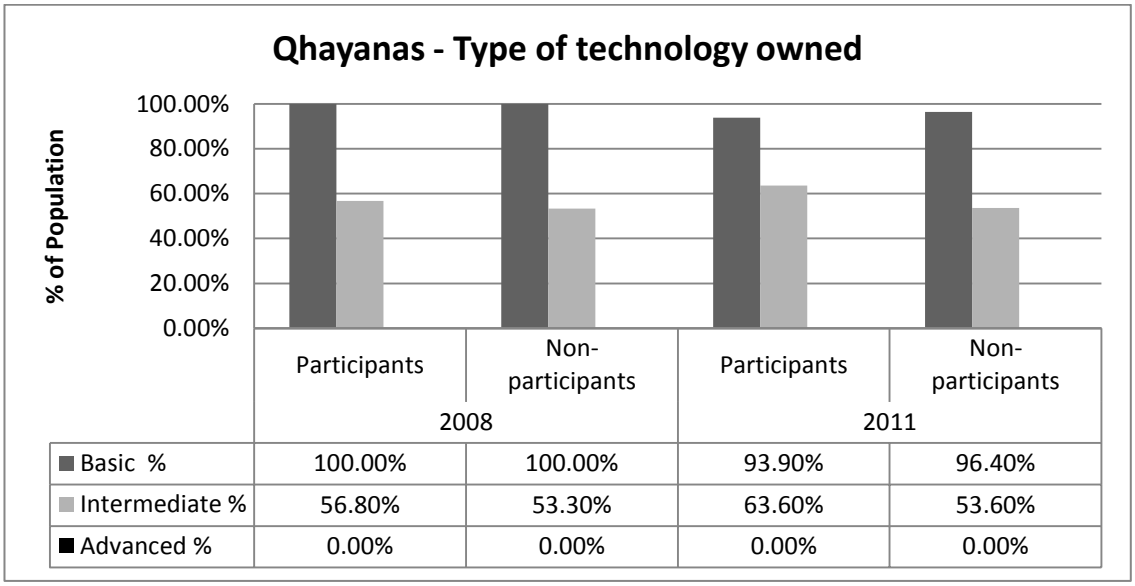
This permanent conflict is a latent one. During 2008 the Bolivian Government took over the 15 262 ha of land that belonged to the Larsen Family in the Chaco region, where many Guaraní families lived in conditions of serfdom, and in December 2010 the government officially declared that these lands belonged to the Guaraní (Navia, 2012). This and other cases of violent land encroachment by landless peasants, and land reversion to the state fostered fear among land owners who could not or would not identify themselves with any particular indigenous group. Although these cases were few and took place on land held by large land owners, local leaders warned of major legal processes throughout the tropical lowlands and Chaco region. With the beginning of the reversion of land to the state, these fears became a reality for large land owners in the Chaco region (Luna, 2012, ERBOL, 2011a). The fear of land encroachment or reversion has influenced an adequate reporting of land tenure, size, system and irrigation.

6.1.3.2 Tool Ownership

The type of tools and equipment owned for agricultural production reflects on the existence of material assets and the level of technology used by farmers in agricultural production. To evaluate this variable three types of tools and equipment were identified. The first level considers "Basic technology" that includes tools and equipment such as plough, shovel, hoe, rake, hand milking, home processing etc.; the second level considers "Intermediate technology" comprising tools and equipment such as yoke, backpack sprayer, portable milking equipment, non-industrial transformation equipment and others that do not use an external power source; the third level of "Advanced technology" consisting of tools and equipment such as rototiller, tractor implements, parlour and milk machines, industrial transformation equipment and others that require an external power source. Farmers in general tend to have and use basic equipment for some plots but can also have other types of equipment and use them in other plots. Therefore, the question formulated allowed farmers to select more than one type of equipment (See question 58 in Appendix 1).

In general farmers from both Qhayanas and Yacuiba have access to basic and intermediate technology, with little or no access to advanced technology (See Appendix 5. 8). In Qhayanas in particular both participating and non-participating farmers have predominantly access to basic technology (See Figure 6.15)

Figure 6.15 Type of technology: tools and equipment owned in Qhayanas



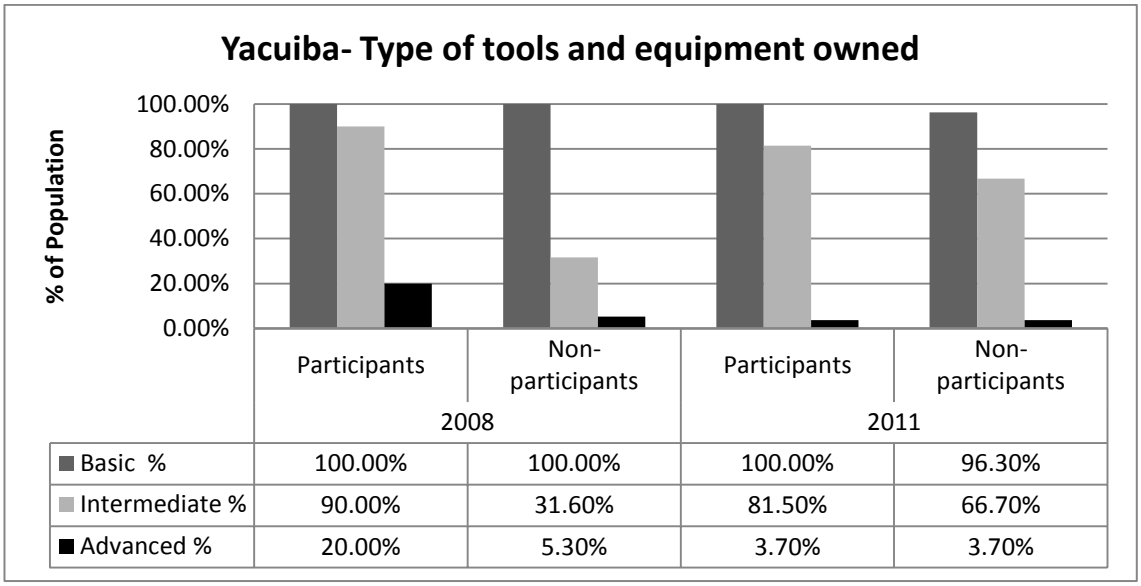
	2008 Participants	2008 Non-participants	2011 Participants	2011 Non-participants
Basic %	100.00%	100.00%	93.90%	96.40%
Intermediate %	56.80%	53.30%	63.60%	53.60%
Advanced %	0.00%	0.00%	0.00%	0.00%

In Qhayanas there has been a general increase in level of technology owned by families. In 2008 all families of both the participant and non-participant groups had Basic technology, 57% of the participating families and 53% of the non-participating families had also intermediate technology. In 2011, 94% of the participating families and 96% of the non-participating families reported owning basic technology, 64% of the participants and 54% of the non-participants also reported owning intermediate level tools and equipment.

In Yacuiba the participant and non-participant groups followed contrasting patterns of technology ownership between 2008 and 2011 (See Figure 6.16). Participating farmers reported lower levels of intermediate and advanced technology in 2011 in comparison to 2008, while the non-participating farmers reported higher levels of intermediate technology in 2011. To analyse changes experienced in this variable it is important to consider that the main difficulties that emerged during project operation were specifically related to tools and equipment provided by the project. Due to the lack of fund disbursement from the local Departmental Government, the service provider was unable to acquire a stock of equipment that had been agreed with farmers (See Quote 14) The delays in purchasing created discontent in some participating farmers who gradually stopped attending meetings. Later, when equipment was finally assigned, other farmers enrolled in the process and benefited from the new technology. Thus the newly enrolled farmers that were part of the non-participating group, reported an increased access to intermediate technology. The conflict

with funds and equipment is a factor that influenced the lower levels of equipment tenure reported by participants and the increasing levels reported by non-participants in 2011.

Figure 6.16 Type of tools and equipment owned in Yacuiba



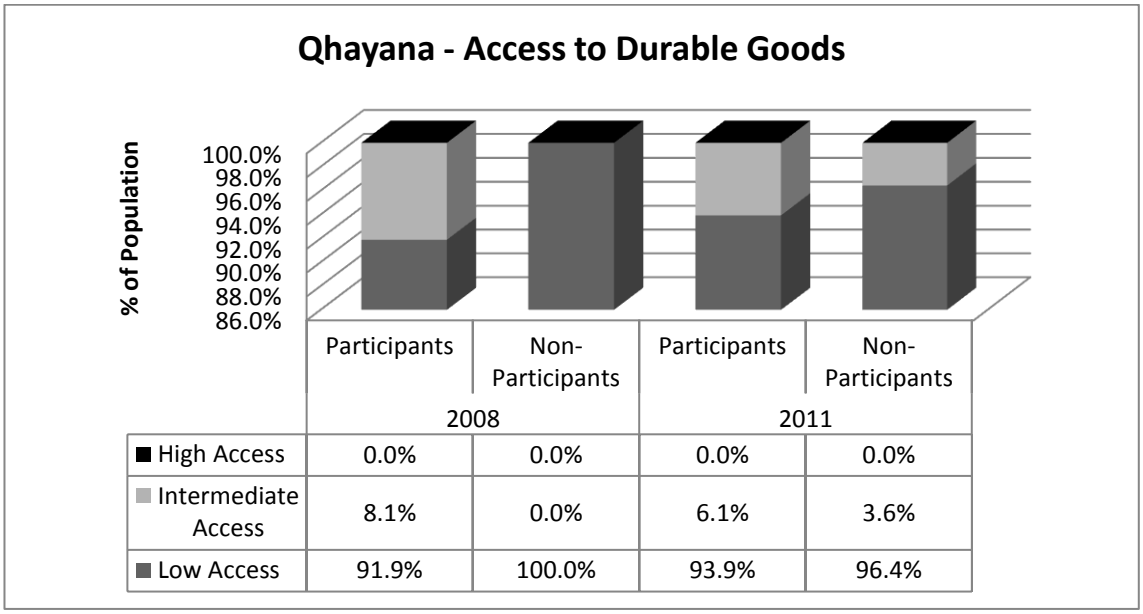
	2008 Participants	2008 Non-participants	2011 Participants	2011 Non-participants
Basic %	100.00%	100.00%	100.00%	96.30%
Intermediate %	90.00%	31.60%	81.50%	66.70%
Advanced %	20.00%	5.30%	3.70%	3.70%

6.1.3.3 Access to durable goods

The access or possession of durable goods is an alternative or complementary form of evaluating material assets. The survey included questions on the possession and access to ten different types of household goods and productive equipment (See question 59 in Appendix 1). Although in some cases goods may be owned by the family, in other cases there are mechanisms of collective management and access to some more expensive goods. For this reason, the survey considered general access which includes ownership or other mechanisms that enable use. Based on the information collected through the survey, three levels of access were identified: Low access when farmers reported 0 to 3 items, Intermediate access when they reported 4 to 7 items, and High Access when more than 7 items were reported. In general data from both sites shows a trend towards higher levels of access (See Figure 6.17).

In Qhayanas there were small changes in access and/or possession of durable goods between 2008 and 2011. Overall it is important to mention that in this region there is low access to durable goods.

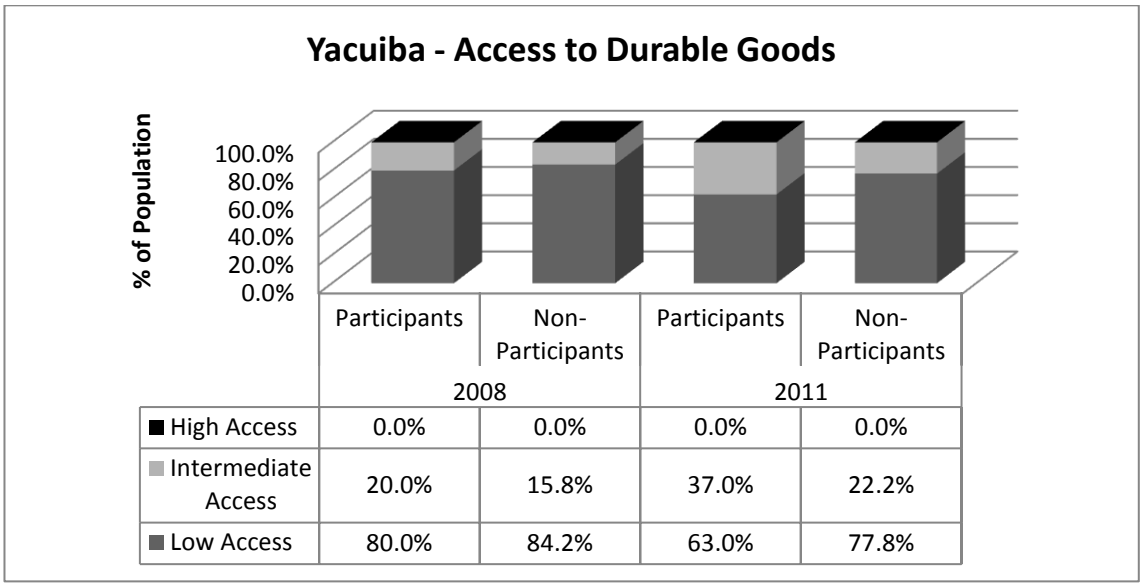
Figure 6.17 Levels of access or possession of durable goods in Qhayanas



	2008 Participants	2008 Non-Participants	2011 Participants	2011 Non-Participants
High Access	0.0%	0.0%	0.0%	0.0%
Intermediate Access	8.1%	0.0%	6.1%	3.6%
Low Access	91.9%	100.0%	93.9%	96.4%

In Yacuiba on the other hand changes were of a greater magnitude for both the participating and non-participating groups. While in 2008, 20% of the participating families and 15.8% of the non-participating families had an intermediate level of access or possession of durable goods, in 2011 these figures rose to 37% of the participating families and 22.2% of the non-participating families, the larger increase being in the participating group.

Figure 6.18 Levels access or possession of durable goods in Yacuiba



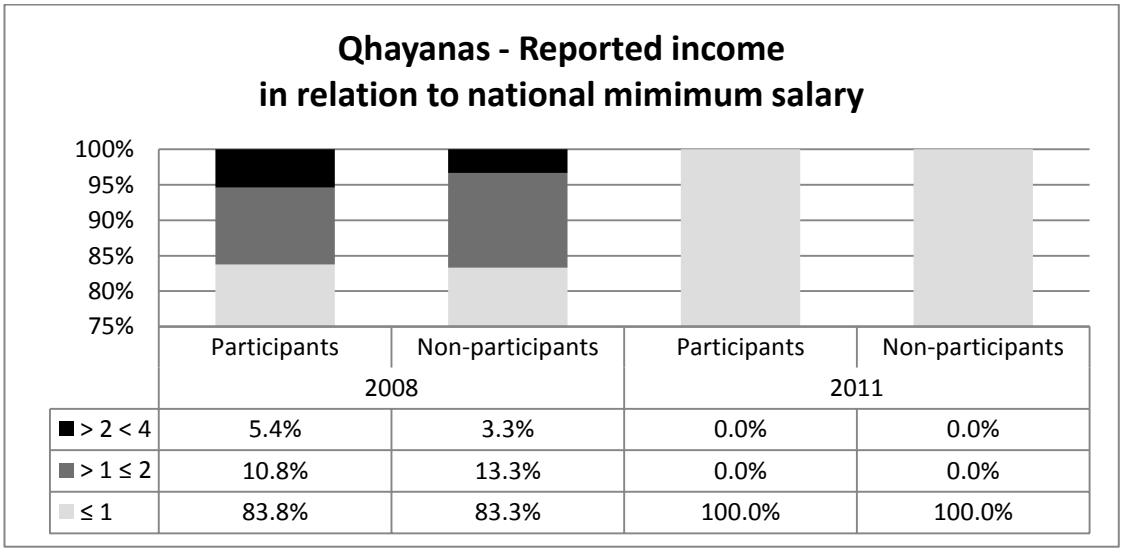
	2008 Participants	2008 Non-Participants	2011 Participants	2011 Non-Participants
High Access	0.0%	0.0%	0.0%	0.0%
Intermediate Access	20.0%	15.8%	37.0%	22.2%
Low Access	80.0%	84.2%	63.0%	77.8%

6.1.4 Financial assets

To evaluate the general income of rural families the level of monthly income was assessed through four self-reported income levels. These four levels were selected based on previous income information provided by the NGOs operating in Qhayanas (PRODII) and Yacuiba (PROINPA), as well as poverty line and income information from the National Statistics Institute of Bolivia (INE). The four levels of income are: less or equal to one minimum salary, more than one and up to two minimum salaries, between two and four minimum salaries, four minimum salaries and above. In Bolivia the national minimum salary increased from 2008 to 2011 from 525 Bs to 679.50 Bs.

In Qhayanas there has been a general decrease in family income for both participants and non-participants between 2008 and 2011. In 2008 more than 16% of both participating and non-participating families had an income higher than one minimum salary a month, whereas in 2011 all families reported having a pro-rated income of one minimum salary or less. Although the drought of 2010 (See Table 3.6) had an important effect on production and income, the largest effect was the change in the level of the national minimum salary. The government changed the level of the minimum salary to improve conditions for labourers but farmers did not perceive this increase since most of their production was destined to home consumption and seeds, with limited or no surplus for the market. The question formulated specifically addressed a reference to the minimum salary in order to avoid sensitivity of farmers, and this created a problem of measurement after the changes in government policies.

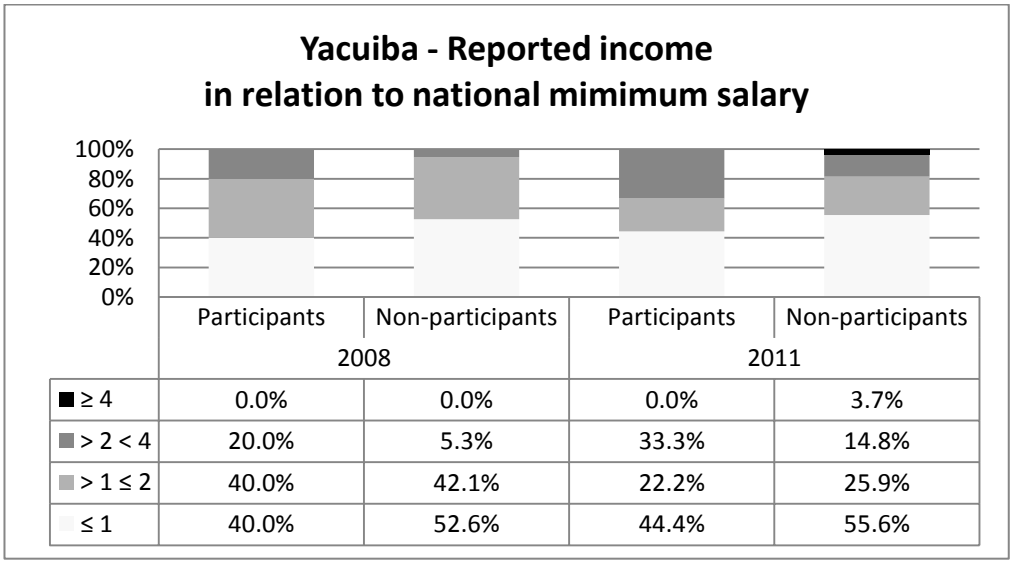
Figure 6.19 Reported income in relation to national minimum salary in Qhayanas



	2008 Participants	2008 Non-participants	2011 Participants	2011 Non-participants
> 2 < 4	5.4%	3.3%	0.0%	0.0%
> 1 ≤ 2	10.8%	13.3%	0.0%	0.0%
≤ 1	83.8%	83.3%	100.0%	100.0%

In Yacuiba reported income has generally increased from 2008 to 2011. The proportion of families that reported income of one or less than one minimum salary slightly increased between 2008 and 2011 for both the participating and non-participating groups. The most important changes show a reduction in the number of families that report income between one and two minimum salaries and a consequential increase in the number of families that report income above two minimum salaries. This shows a general shift towards higher income of the middle class families and the persistence of poverty in lower income families.

Figure 6.20 Reported income in relation to national minimum salary in Yacuiba



	Participants	Non-participants	Participants	Non-participants
	2008		2011	
≥ 4	0.0%	0.0%	0.0%	3.7%
> 2 < 4	20.0%	5.3%	33.3%	14.8%
> 1 ≤ 2	40.0%	42.1%	22.2%	25.9%
≤ 1	40.0%	52.6%	44.4%	55.6%

6.2 Agency at the collective level

Collective agency implies different forms of aggregation that operate as a whole in their exercise of voice and action. To evaluate agency at the collective level, the situation of social assets (See Table 2.3 and Table 2.4) is depicted comparatively within sites between 2008 and 2011. Social assets evaluated include membership in organizations, benefits perceived from the organization, solidarity and reciprocity, and collective action (See Table 3.2). A general comparison between sites will also be made in order to provide insights for the global comparative analysis presented in the final section of this chapter.

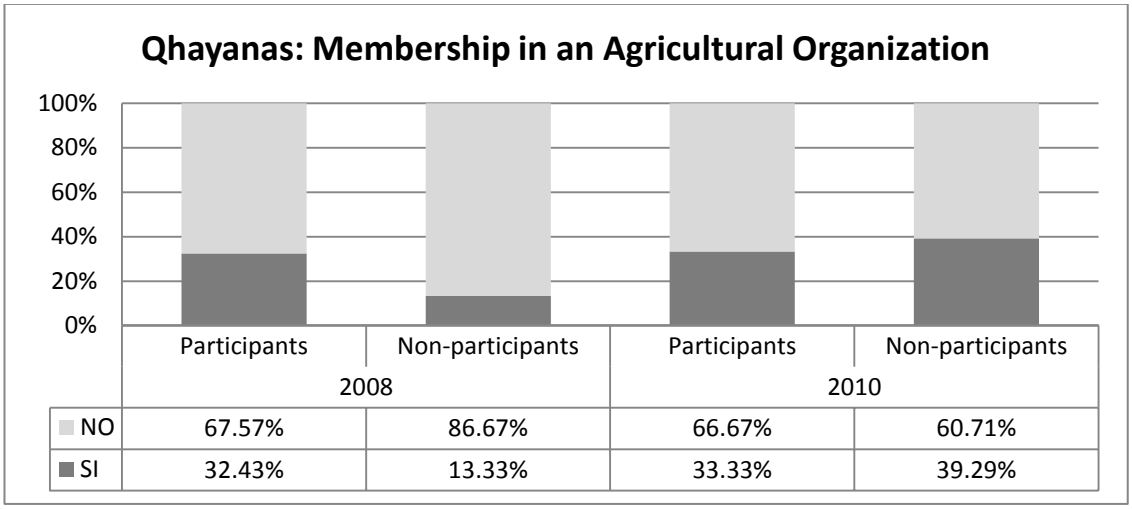
6.2.1 Membership in organizations

In Bolivia there is a high level of participation and involvement of rural families in different types of organizations, some studies have shown up to 67 different types of local associations (Grootaert and Narayan, 2001). To avoid a general description that may include membership

in different types of organizations, families were asked to report their membership status in an agricultural related organization considered relevant or important for their family. This perception of membership has changed between 2008 and 2011, yet the changes differ between cases (See Appendix 5. 11).

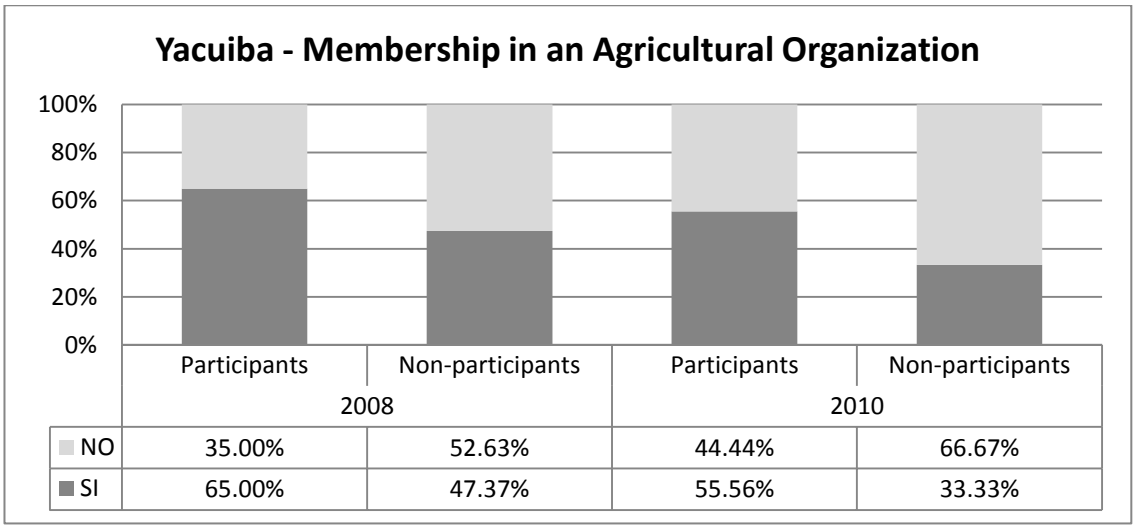
In Qhayanas the membership status of the participating group raised from 32.4% to 33.3%, although the actual figures of members decreased from 12 to 11 families. The non-participating group on the other hand increased from 13.3% to 39.29% with a shift from 4 families in 2008 to 11 families in 2011.

Figure 6.21 Membership in an agricultural related organization in Qhayanas



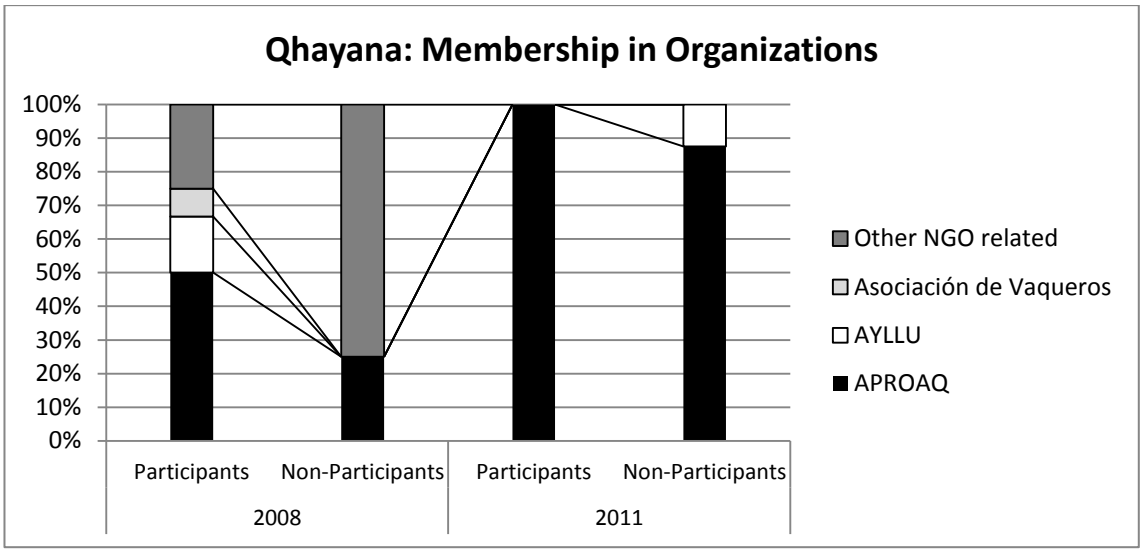
In Yacuiba there was a change towards less membership between 2008 and 2011, for both the participating and non-participating families.

Figure 6.22 Membership in an agricultural related organization in Yacuiba



When analysing membership, an important issue to consider is the organizations themselves since there were outstanding differences between 2008 and 2011. In Qhayanas participating farmers in 2008 acknowledged membership in 6 different organizations that they considered important for their family. 50% of them acknowledged being part of APROAQ[129] and 16.7% mentioned the local traditional organization "Ayllu", and other 4 NGO related organizations with an even distribution of members among all four. In 2011 those figures changed considerably and all participating families that acknowledged membership mentioned APROAQ as the main organization (See Figure 6.23). Likewise in the Non-participant group during 2008 four organizations were mentioned with an even distribution of members among them. One of these organizations was APROAQ that passed from 25% in 2008 to 87.5% in 2011. The 3 NGO-related organizations disappeared in 2011 while the local traditional organization "Ayllu" was mentioned by 12.5% of the non-participants.

Figure 6.23 Main organizations and membership fluctuation in Qhayanas



In Yacuiba changes in membership patterns between 2008 and 2011 have moved families towards a broader group of organizations regarded as important. In 2008 the participating group rated the Groundnuts Marketing Association (38.5%) and the OTB[130] (23.1%) as the most important organizations where they held membership. In 2011 the importance of these associations changed radically and while they may remain as members, the importance for the

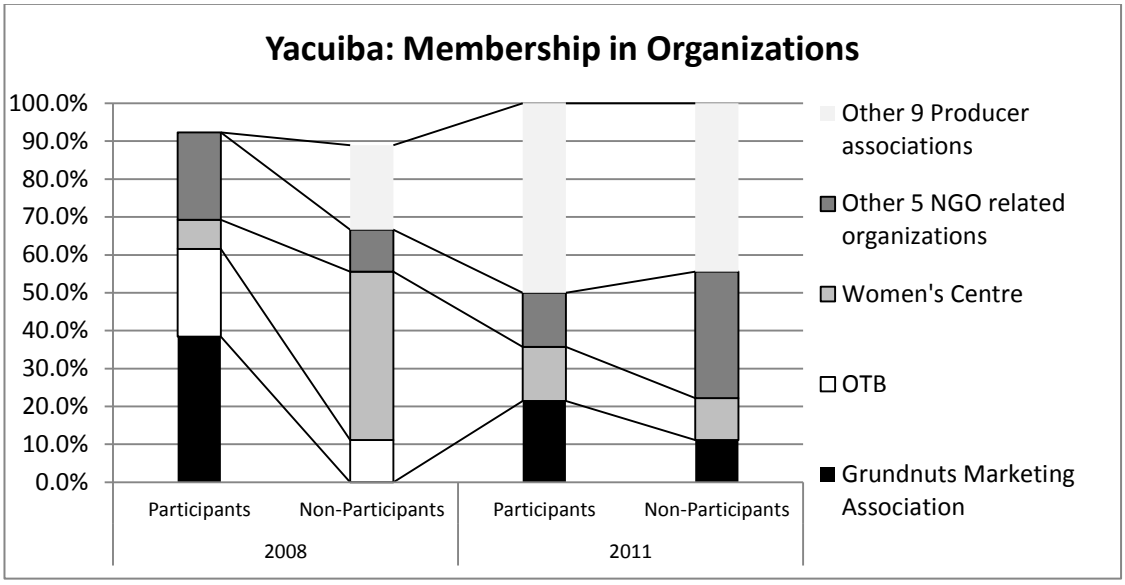
[129] Organic Agricultural Producer Association of Qhayanas (Spanish Acronym)

[130] Territorial Base Organization (Spanish Acronym). OTBs were created with the enactment of the Popular Participation Law in 1994, in order to provide and organizational framework for communities that had no traditional structure, and thus enable them to participate in processes of the local municipal governments. While OTBs are a legal mechanism they may spend time inactive and be activated by society when interaction with the local municipal governments is required.

family has significantly decreased to 21.4% for the Groundnuts Marketing Association and 0% for the OTB. Similarly, the non-participating group experienced an opening towards a larger number or organizations and a decrease in the perception of relevance of the Women Centre that changed from 44.4% in 2008 to 11.1% in 2011.

Different factors influence changes in the importance of the different organizations for the family. To understand the perception of importance granted by the families as well as the changes that took place between 2008 and 2011, the following section analyses the perceived benefits from agricultural related organizations.

Figure 6.24 Main organizations and membership fluctuation in Yacuiba



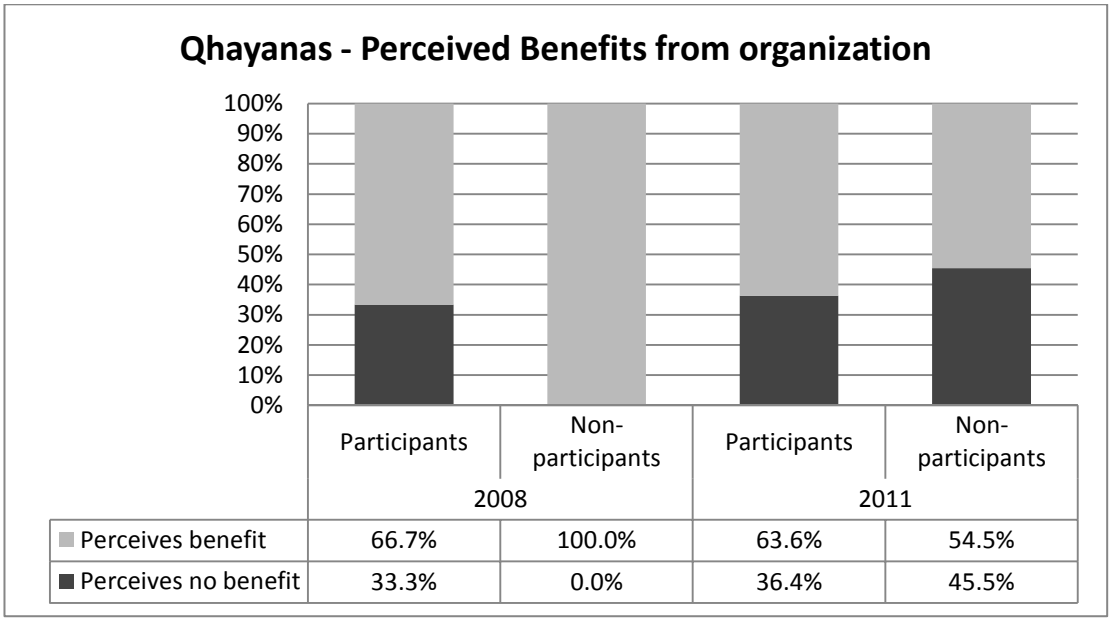
6.2.2 Benefits from organizations

A factor that influences membership status is the benefits that farmers perceive from their affiliation or membership in an organization. This section will elaborate on the perception of benefits, meaning whether farmers feel that they perceive benefits or not from the agricultural related organization that they consider most important for the family. Additionally the types of benefits perceived will also be analysed to understand changes that have taken place between 2008 and 2011. In general the access to benefits in both Qhayanas and Yacuiba has reduced in 2011 in comparison to 2012 (See Appendix 5. 1)

This analysis shows that in Qhayanas there has been a reduction in the perception of farmers regarding benefits received from the organizations where they are members. In 2008, 67.7% of the participating families and 100% of the non-participating families perceived benefits from

the organization. In 2011, 63.6% of the participating families and 54.5% of the non-participating families perceived benefits. Although both the participating and non-participating families show reduction in the perceived benefits, this reduction is considerably higher for the non-participating group (See Figure 6.25).

Figure 6.25 Perceived benefits from agricultural related organizations in Qhayanas

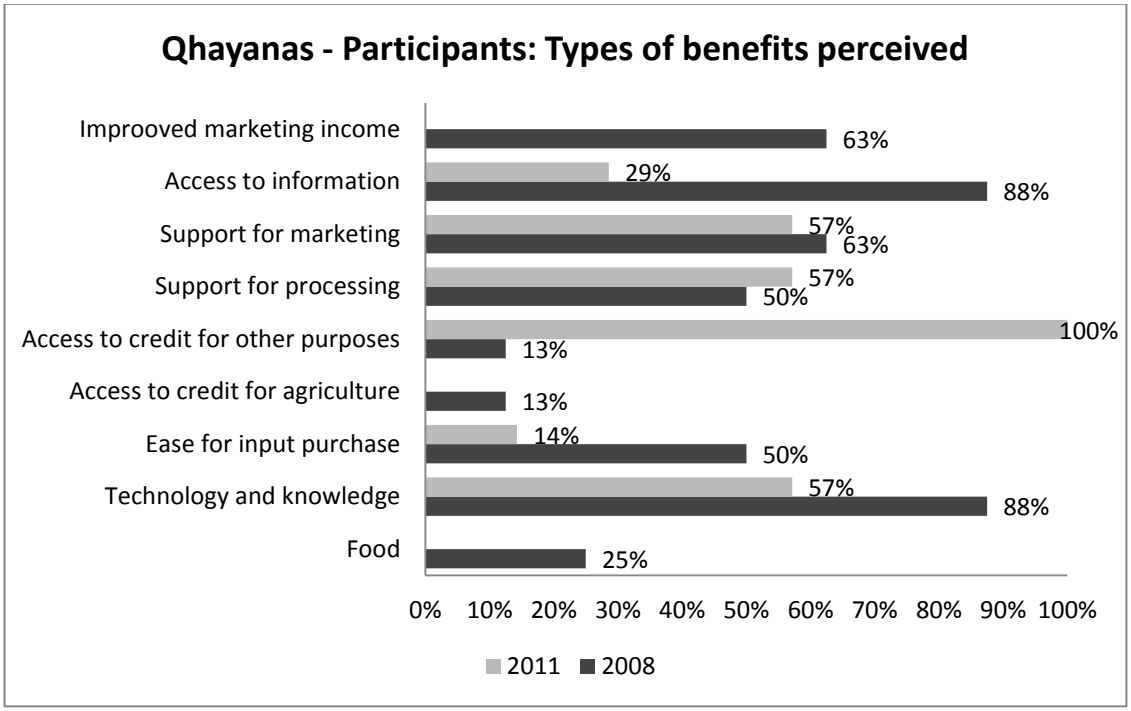


	2008 Participants	2008 Non-participants	2011 Participants	2011 Non-participants
Perceives benefit	66.7%	100.0%	63.6%	54.5%
Perceives no benefit	33.3%	0.0%	36.4%	45.5%

The nature of the changes in benefits perceived between 2008 and 2011 need to be analysed considering the types of benefits reported by the different groups. In 2008 when the project began operation in Qhayanas, there was a higher perception of benefits particularly in terms of improved market income, access to information, technology and knowledge. In 2011 once the project concluded its operation, those benefits reduced considerably and the main benefit perceived in this later stage was access to credit for different purposes. It is also important to mention that the project operated by PRODII in Qhayanas promoted access to market and productive information, new technology to enhance production and developed some market strategies to improve marketing. These initiatives were complemented by a rotation fund started with a small amount of money introduced in the local producer organization, which intended to support the lack of credit from formal institutions in the region. This fund was operated by the organization through small low interest loans granted to its members. Funds capitalized by the organization were continuously lent to its members for a wide range of purposes that could include agriculture, transformation, marketing or other consumption purposes. In 2011 when services provided by PRODII had concluded, the rotation fund continued its operation and became an axis that promoted membership. In 2011 all

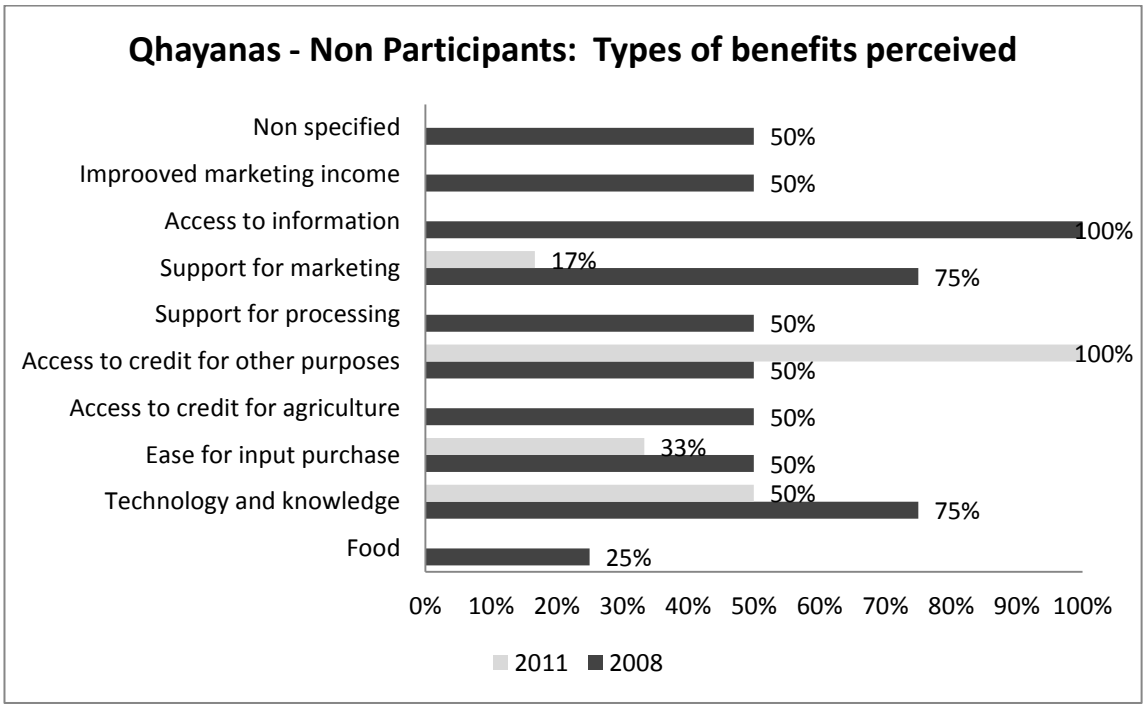
participating farmers were members of APROAQ (See Figure 6.23) and all reported perceiving the benefit of access to credit (See Figure 6.26). The fact that credit was managed by the organization instead of being a service provided by external actors, enabled a continuous growth beyond the conclusion of the project. Furthermore, this service became an axis for the cohesion of the community in one strong producer organization.

Figure 6.26 Types of benefits perceived by participants, from agricultural related organizations in Qhayanas



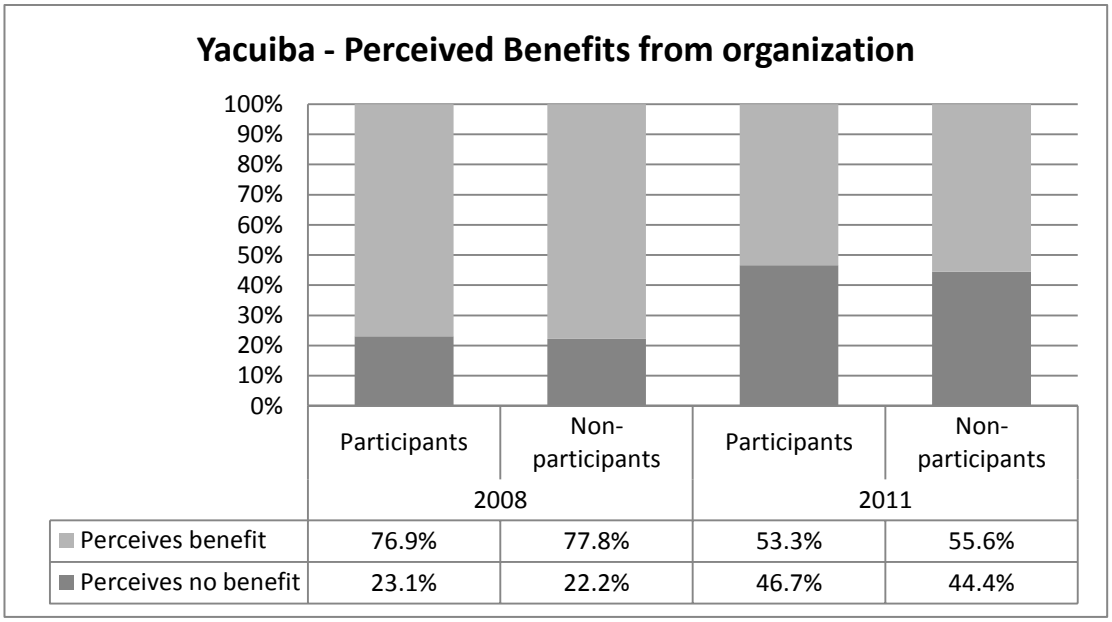
In the non-participant group there were larger observable changes between 2008 and 2011 in terms of benefits perceived. To understand this it is important to mention that in 2008 there were more NGO lead initiatives taking place in the Qhayanas Region as was mentioned in Figure 6.23. Most of these initiatives promoted the enrolment of farmers in their activities through a series of benefits such as market activities to improve income, marketing support specifically, access to information, technology and knowledge among others. Once those initiatives gradually concluded, the perception of benefits diminished in all areas except for the access to credit for other purposes. The Non-participating group gradually changed their earlier organization membership and joined the local producer organization. By 2011 all producers that reported perceiving some type of benefit from their organization mentioned access to credit for other purposes amongst the most important benefits.

Figure 6.27 **Types of benefits perceived by non-participants, from agricultural related organizations in Qhayanas**



In Yacuiba there has also been a reduction in the benefits perceived from organizations for both the participant and non-participant groups (See Figure 6.28).

Figure 6.28 **Perceived benefits from agricultural related organization in Yacuiba**

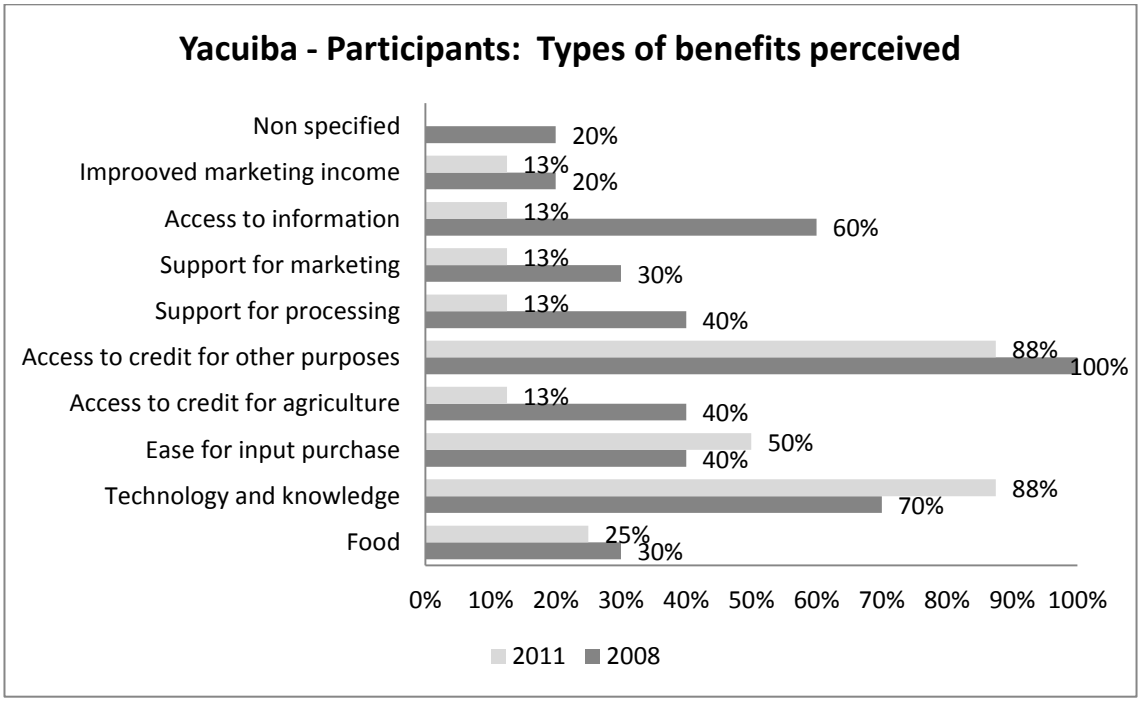


	2008 Participants	2008 Non-participants	2011 Participants	2011 Non-participants
Perceives benefit	76.9%	77.8%	53.3%	55.6%
Perceives no benefit	23.1%	22.2%	46.7%	44.4%

In Yacuiba, the innovation project promoted access to information, technology and knowledge; while the local producer organization endorsed membership that would be favourably

considered by local credit institutions. With the conclusion of the innovation project, perception of benefits decreased considerably for the participant group mainly in terms of access to information, and market linkages (See Figure 6.29). Furthermore, due to the difficulties encountered between the local organization and the local Departmental Government in terms of funding, membership in the organization also decreased (See Figure 6.22 and Figure 6.24) , thus reducing the possibilities of access to credit through the endorsement of such membership.

Figure 6.29 Types of benefits perceived by participants, from agricultural related organizations in Yacuiba

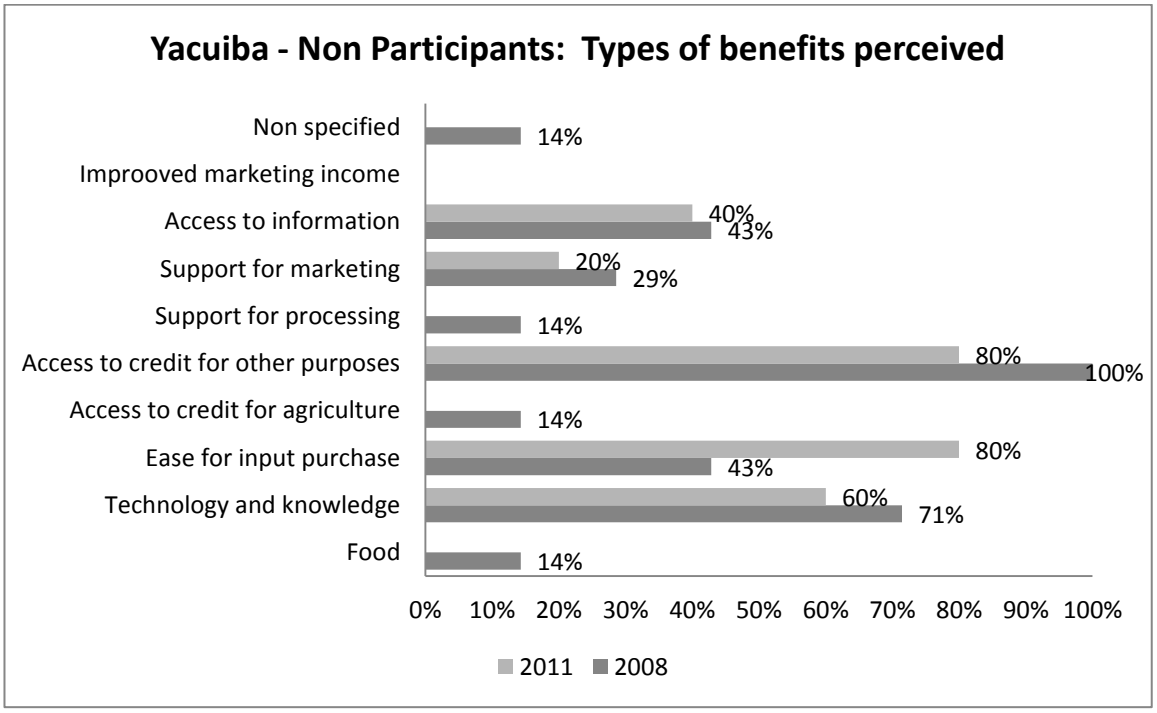


The non-participating group also experienced a reduction in the perception of benefits from the organization between 2008 and 2011. This group did not develop the same type of work as the participant group in terms of market linkages, yet fewer benefits were perceived in terms of support for market activities in general (See Figure 6.30). Like the participant group, the non-participants also experienced a reduction in benefits of access to credit. Furthermore, since during the final phases of project implementation, the non-participating group joined in the project, the conclusion of the project also produced a reduction in access to information, technology and knowledge.

It is also important to mention that both the participating and non-participating groups shifted towards affiliation to other producer organizations and NGO related organizations in 2011 (See

Figure 6.24), while at the same time reporting an increase in benefits related to ease of input purchase.

Figure 6.30 Types of benefits perceived by non-participants, from agricultural related organizations in Yacuiba



6.2.3 Collective Action

An important component of agency is the possibility of individuals and organizations to act collectively as a whole. In this study two different drivers of collective action were analysed, agriculture and market. The analysis will depict the predisposition of participating and non-participating farmers to mobilize and lead collective action in agriculture and market initiatives.

6.2.3.1 Collective Action in Agriculture

This section elaborates on collective action for agriculture through the analysis of actors or groups of actors that mobilize and lead collective initiatives to deal with productive constraints or service provision for agricultural production.

In Qhayanas mobilization for collective action for the participating group in 2008 was higher than in 2011. In 2008 within the participating group, 8% of farmers mentioned the possibility of no-one mobilizing (See Figure 6.31) or leading (See Figure 6.32) an initiative to promote

changes or improve agricultural conditions in the community. By 2011 48% of the participating families considered the possibility of no-one mobilizing and 42% considered the possibility of no-one leading such initiatives. The local community organization regarded as "The Ayllu" has experienced a large decline in the perception of mobilization and leadership for collective action along with other local actors. The only actors that seemed to escape this reduction in mobilization and leadership for the participating group were the producer association and the operating NGOs with an increase of up to 6% in mobilization.

Figure 6.31 Qhayanas: Participants mobilization for collective action in agriculture

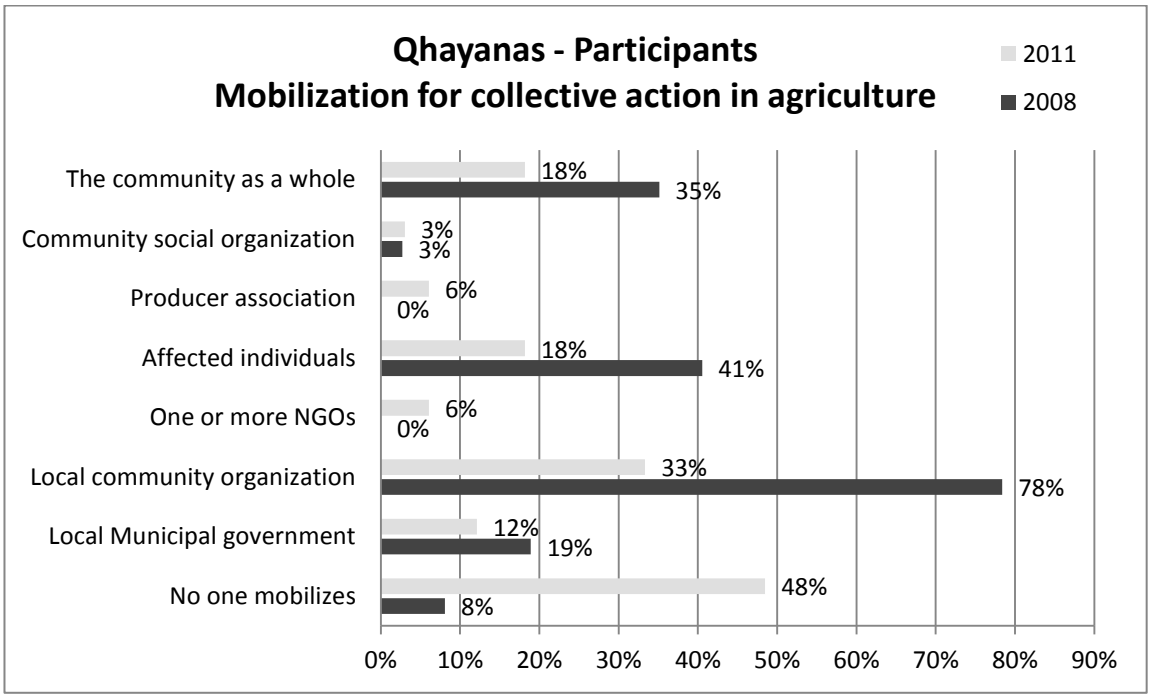
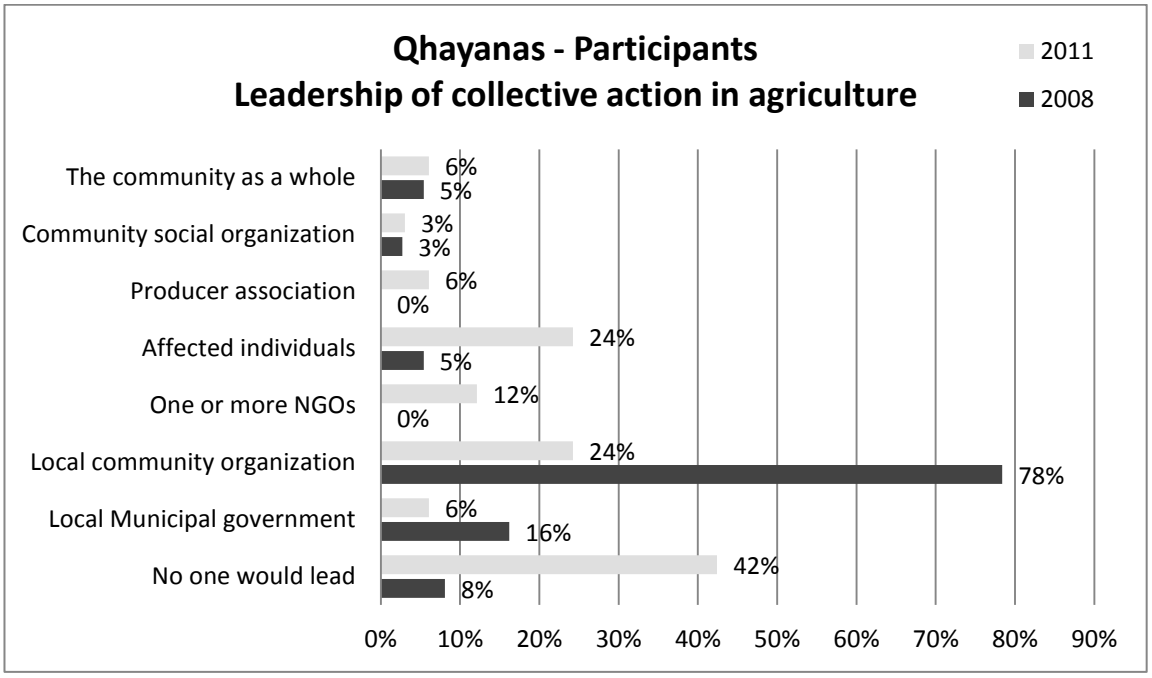


Figure 6.32 Qhayanas: Participants leadership for collective action in agriculture in



The non-participating group in Qhayanas experienced a decline in individual and community mobilization (See Figure 6.33) and leadership (See Figure 6.34) from 2008 to 2011. While in 2008, 17%of the non-participating farmers perceived the possibility of no one mobilizing and 8% perceived the possibility of no-one leading initiatives to promote changes or improve agricultural conditions in the community, in 2011; 29% perceived that there could be no mobilization and 42% that there could be no leadership. Although the reduction in perceived mobilization by the local community organization was small (1%), its leadership declined considerably from 78% in 2008 to 25% in 2011. Nonetheless, other community social organizations aside from the Ayllu emerge as alternatives that would mobilize to promote changes or improve conditions in the community. Leadership on the other hand has shifted from a diversity of actors in 2008 to a higher emphasis on affected individuals in 2011.

Figure 6.33 Qhayanas: Non-participants mobilization for collective action in agriculture

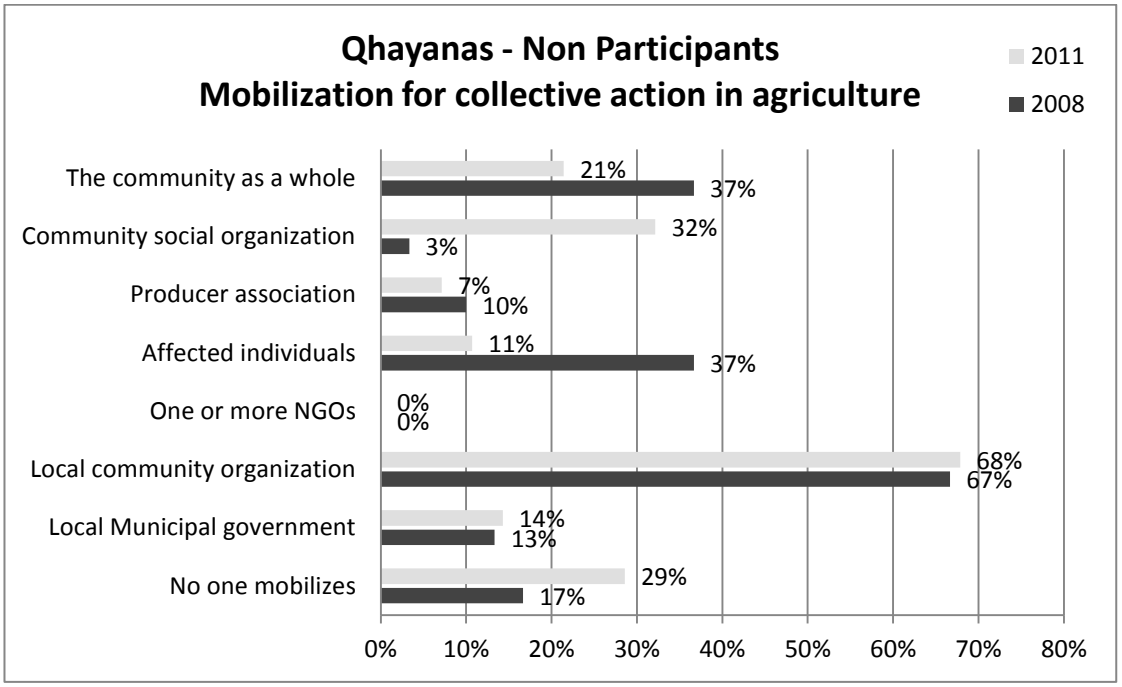
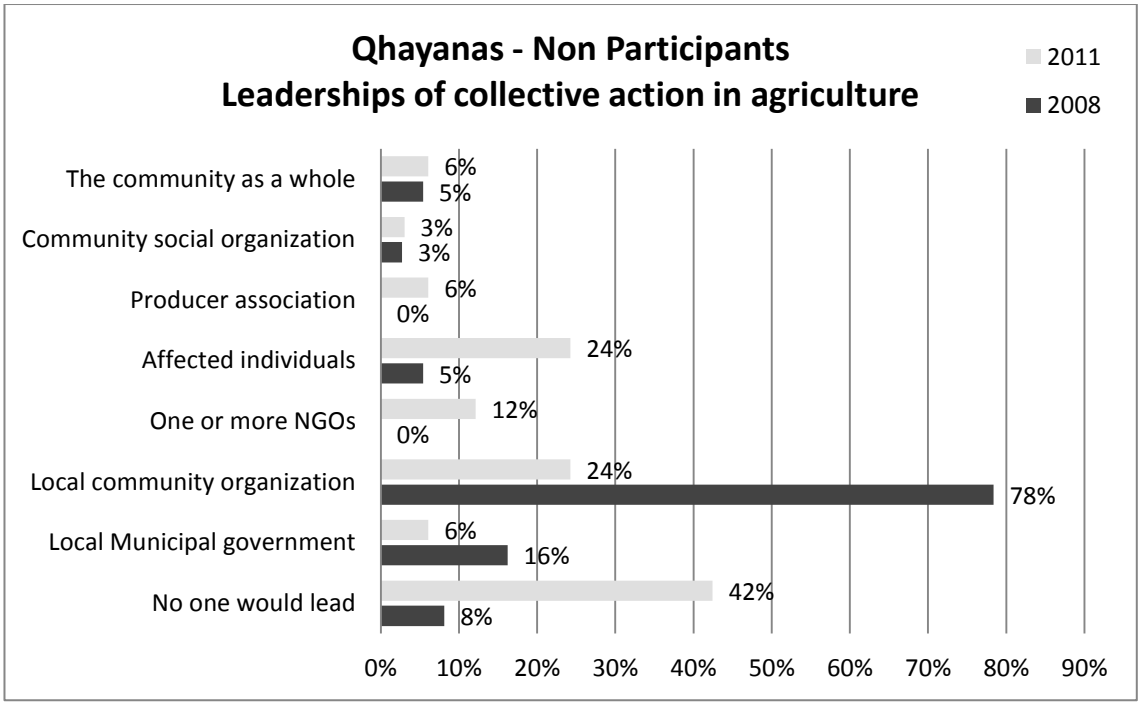


Figure 6.34 Qhayanas: Non-participants leadership for collective action in agriculture



In Yacuiba there have been reductions in the perception of mobilization for both the participating and non-participating groups in relation to agriculture. In the participating group the largest changes were related to the "affected individuals" who were perceived with a high possibility of mobilization in 2008 (80%) and a low possibility (8%) in 2011 (See Figure 6.35).

Leadership of "affected individuals" in the participating group also decreased from 30% in 2008 to 15% in 2011 (See Figure 6.36). On the other hand, both the mobilization and leadership of the local community organization "Sindicato" in the participating group remained stable between 2008 and 2011.

Figure 6.35 Yacuiba: Participants mobilization for collective action in agriculture

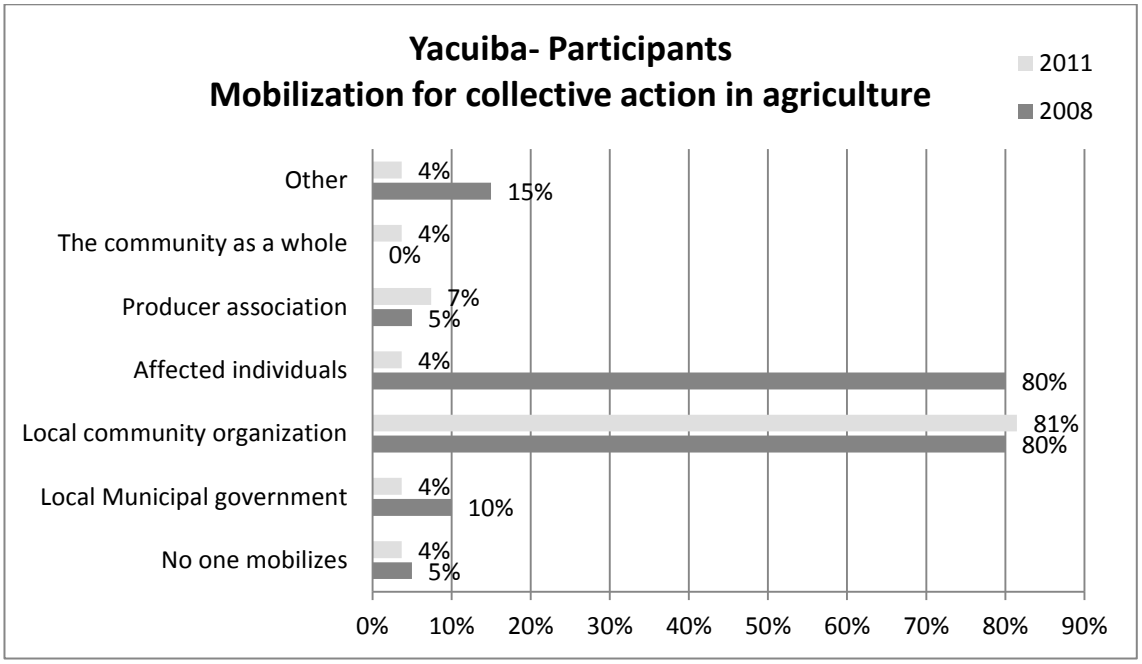
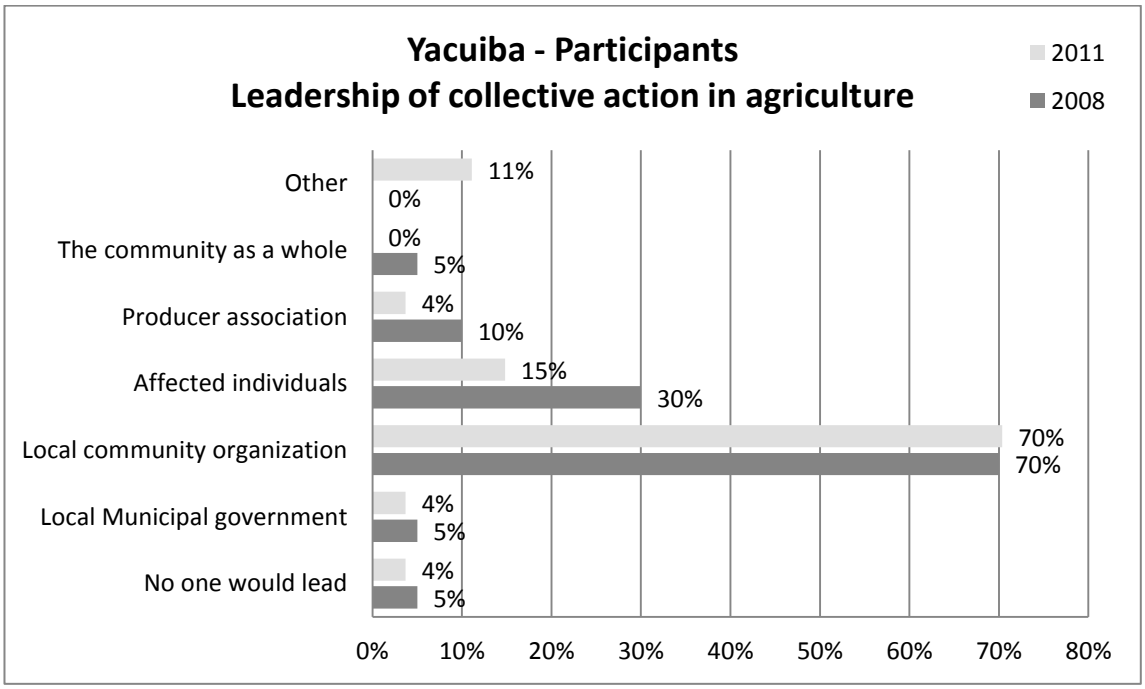


Figure 6.36 Yacuiba: Participants leadership for collective action in agriculture



The non-participant group in Yacuiba experienced a larger decrease in possibility of mobilization than the participant group. In 2008, 5% of the interviewed families mentioned the possibility of no-one mobilizing to address issues in the agricultural sector, and in 2011 this possibility rose to 19% (See Figure 6.37). Likewise the perception of no-one leading collective initiatives in the agricultural sector rose from 11% to 15% (See Figure 6.38). While for the participating group there were no changes in perception of mobilization and leadership of the local community organization, for the non-participating group the perception of mobilization and leadership of the "Sindicato" has decreased in 2011. The perception of mobilization of affected individuals has decreased from 68% in 2008 to 19% in 2011, yet the perception of leadership has shifter inversely from 16% in 2008 to 37% in 2011.

Figure 6.37 Yacuiba: Non-participants mobilization for collective action in agriculture

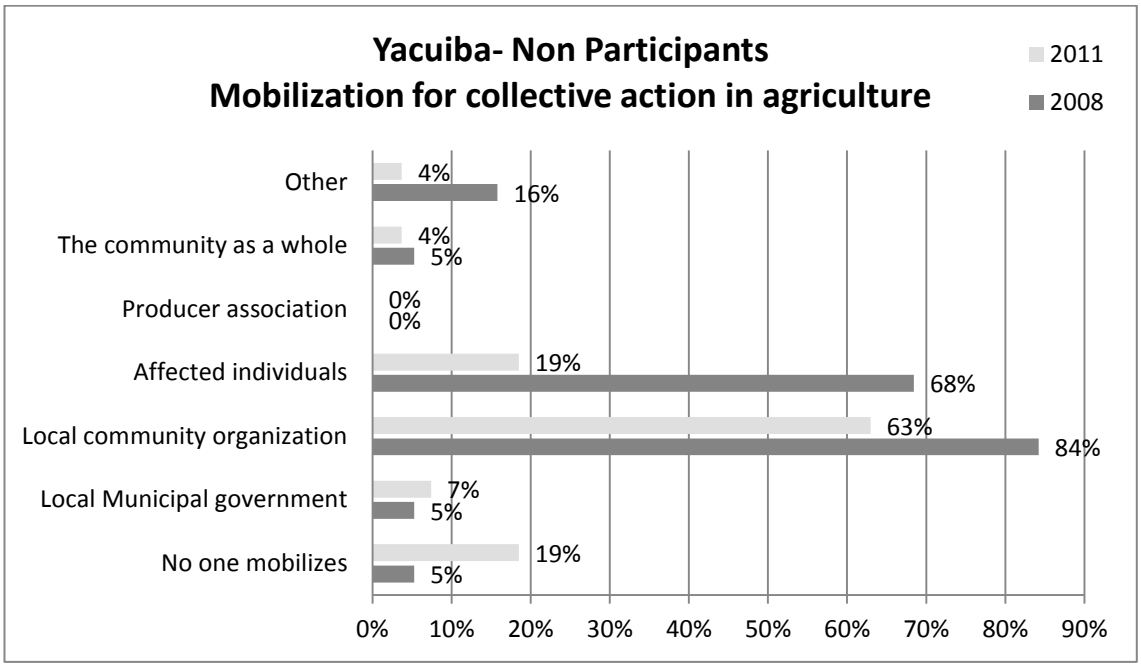
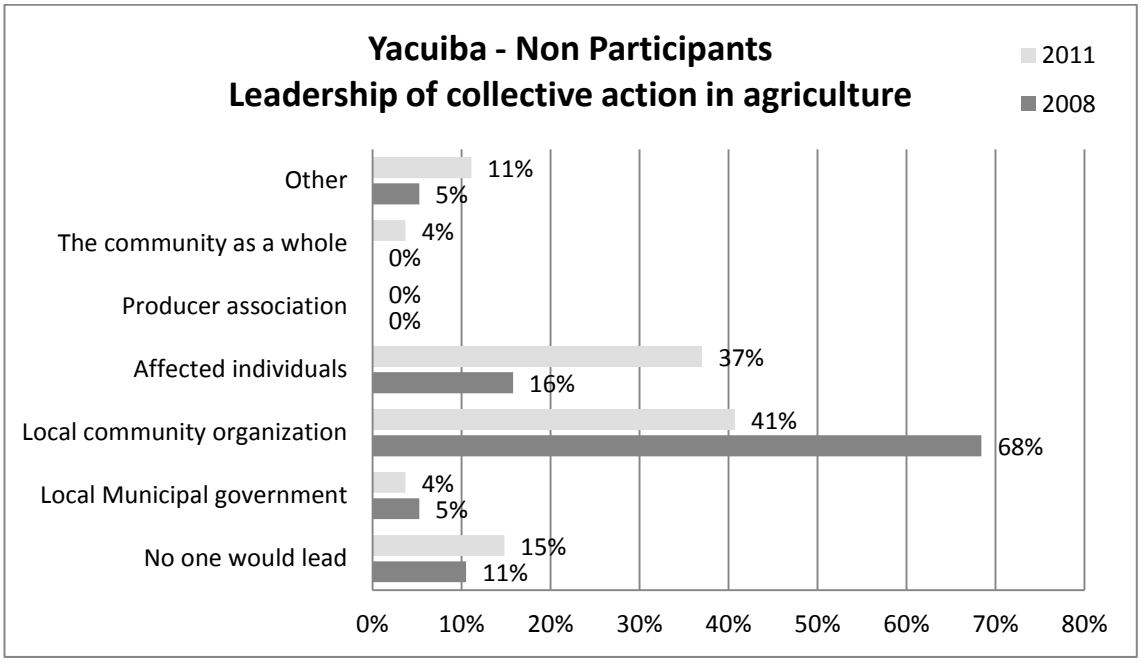


Figure 6.38 Yacuiba: Non-participants leadership for collective action in agriculture



6.2.3.2 Collective Action in Market Linkages

To understand the dynamics of collective action for market linkages in Qhayanas it is important to take into consideration the lack of surplus production in the region, thus most of the agricultural production is destined to home consumption and food security. Most of the recent market initiatives in Qhayanas have encouraged surplus and processing in order to increase consumption and the potential benefits of market linkages.

The participating group in Qhayanas experienced a reduction in both mobilization (See Figure 6.39) and leadership (See Figure 6.40) of collective action for market initiatives between 2008 and 2011. Before 2008 there was little awareness of the need to link production to the market and most of the food shortages throughout the year were covered by income from temporary work by family members in the mining sector near the towns of Uncia and Llallagua, and other short term labour activities. Through the efforts of the innovation project to enhance production and transformation, some products were made available for the market and this has highlighted the role of the producer associations and of other community social organizations. In turn this awareness has increased the perception of their mobilization and leadership in 2011. The socio-political role of the "Ayllu" as the main local organization and its

limitations for market purposes has been acknowledged by farmers and thus the perception of its mobilization and leadership has decreased in 2011.

Figure 6.39 Qhayanas: Participants mobilization for collective action in the market

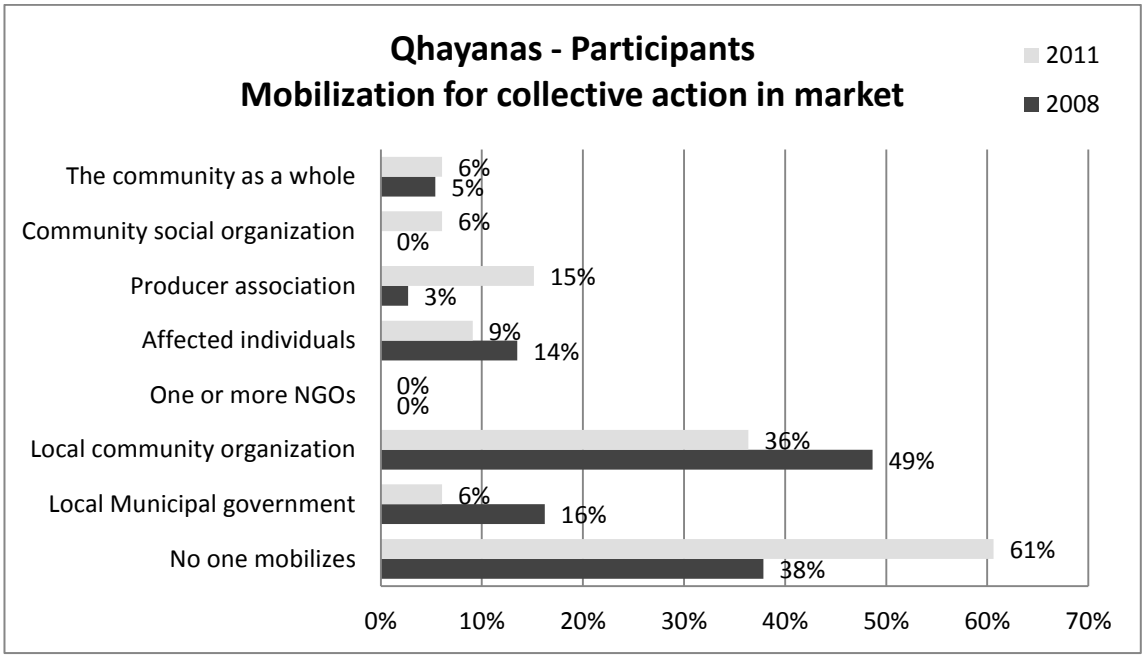


Figure 6.40 Qhayanas: Participants leadership for collective action in the market

The perception of mobilization and leadership of collective action for market services has generally decreased from2008 to 2011 in the non-participating group from Qhayanas.

Farmers' perception of lack of mobilization (no-one mobilizes) and leadership (no-one leads) has increased between 2008 and 2011, from 39% to 57% in mobilization and from 0% to 43% in leadership. A similar situation takes place for "affected individuals" that are perceived with lesser possibilities of mobilizing and leading collective action for market purposes in 2011. Yet despite the perception of lesser mobilization and leadership in general and for individuals, all other actors or groups of actors have experienced positive changes within the perception of the non-participant group of Qhayanas.

Figure 6.41 Qhayanas: Non-participants mobilization for collective action in the market

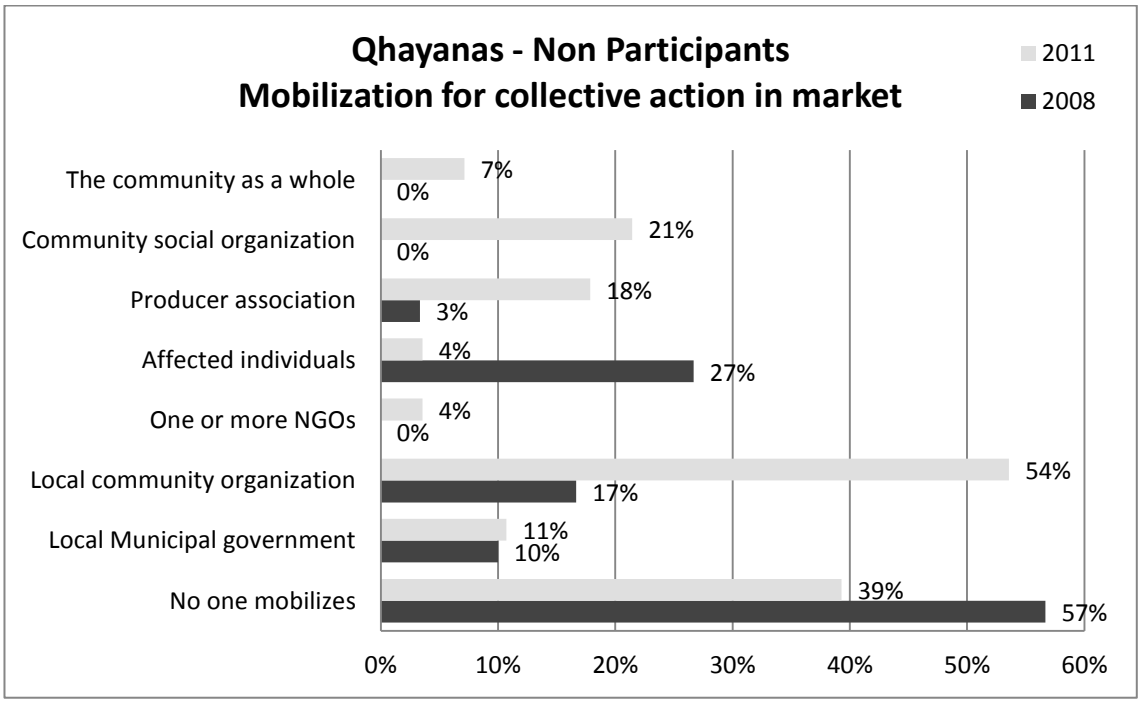
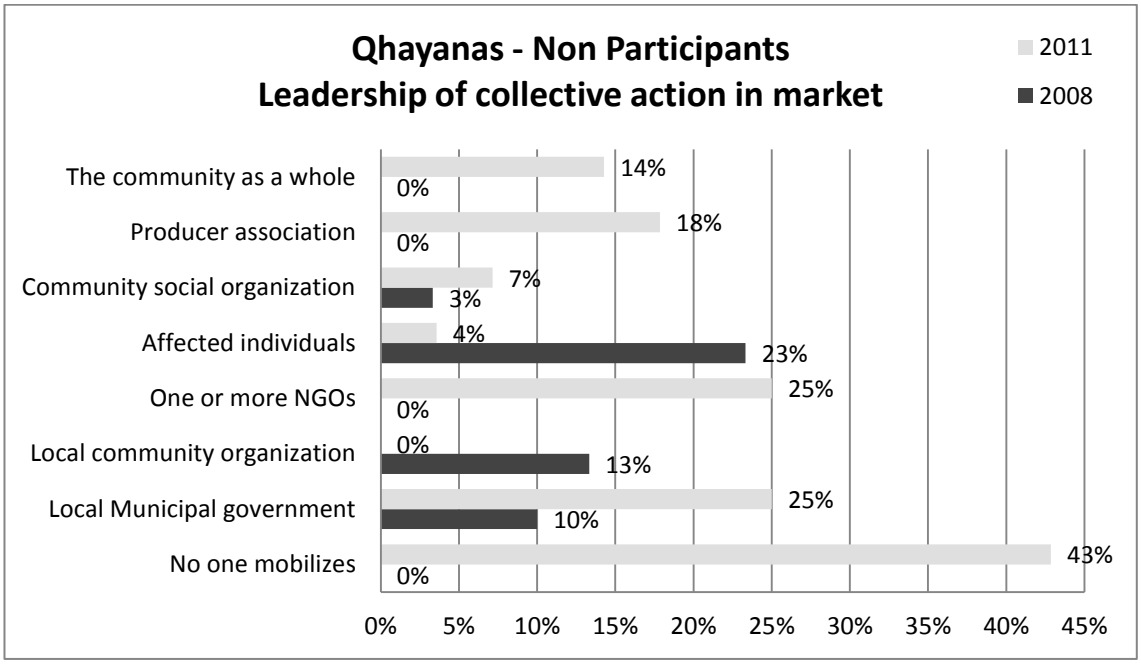


Figure 6.42 Qhayanas: Non-participants leadership for collective action in the market



In Yacuiba the participating group perceived an increase in the general sense of mobilization (See Figure 6.43). The possibility of mobilization for the community social organization "Sindicato – OTB" has increased from 30% in 2008 to 48% in 2011. Likewise the perception of mobilization of the producer association has increased from 3 to 6%. The sense of leadership for collective action in the participant group from Yacuiba has generally increased (See Figure 6.44). Al though some interviewed families have mentioned the possibility of no-one leading such processes (15%) in 2011, all other actors seem to show an increase in the possibility of leading such actions.

Figure 6.43 Yacuiba: Participants mobilization for collective action in the market

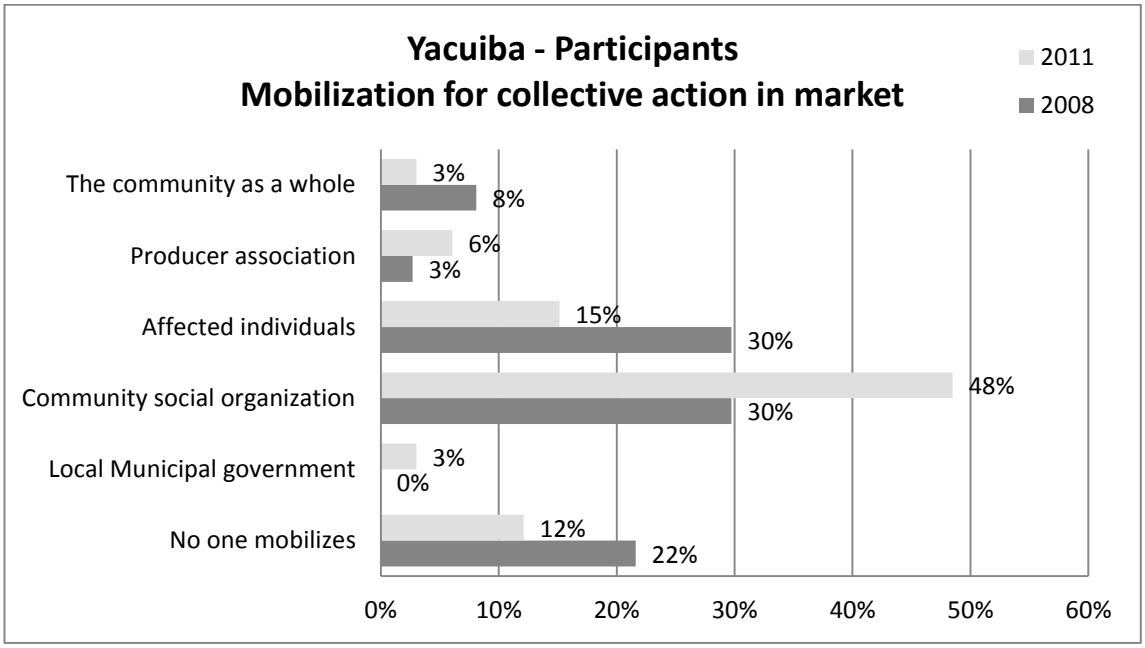
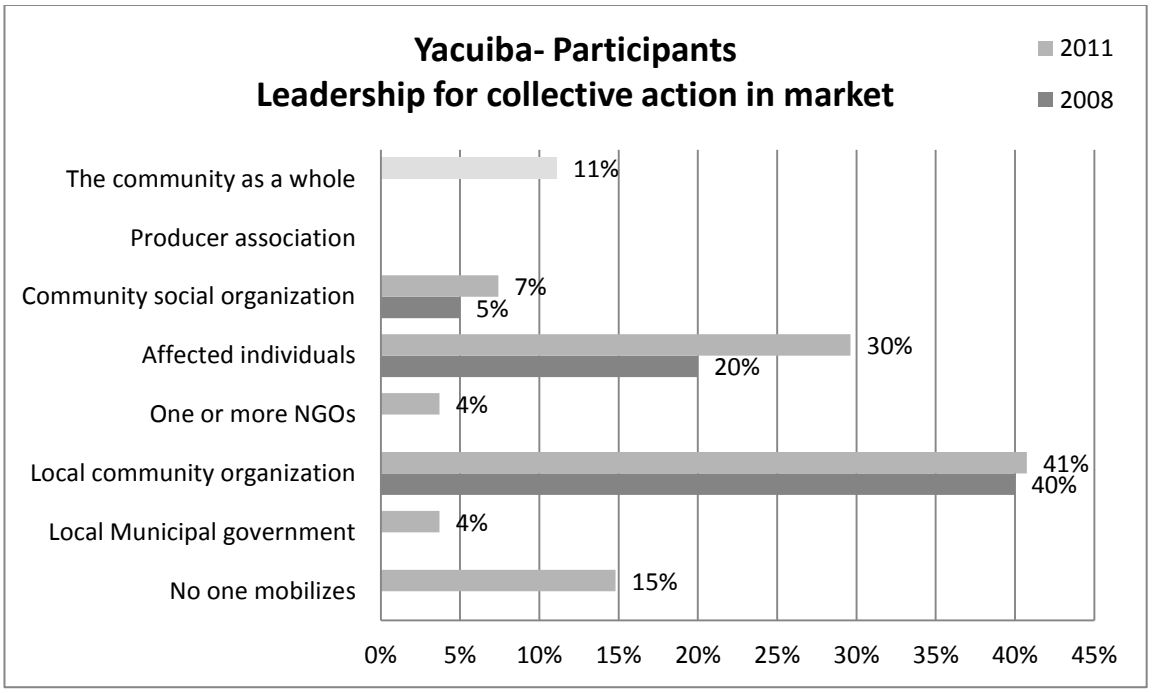


Figure 6.44 Yacuiba: Participants leadership for collective action in the market



The perception of mobilization for collective action in market initiatives for the non-participant group in Yacuiba has increased in 2011 (See Figure 6.45). The perception that the community social organization (Sindicato-OTB) would mobilize for collective action in market initiatives has increased from 30% in 2008 to 64% in 2011. Nonetheless, the perceived mobilization capacity of individual actors has decreased from 30% in 2008 to 11% in 2011. The perception

of leadership has diversified (See Figure 6.46). In 2008 families perceived only the local community organization and the affected individuals as capable of leading a collective action initiative in the market. In 2011 non-participating farmers perceive that up to 5 different actors could pursue leadership in the market. Nonetheless, the possibility of no one leading such mobilizations is also present in 2011.

Figure 6.45 Yacuiba: Non-participants mobilization for collective action in the market

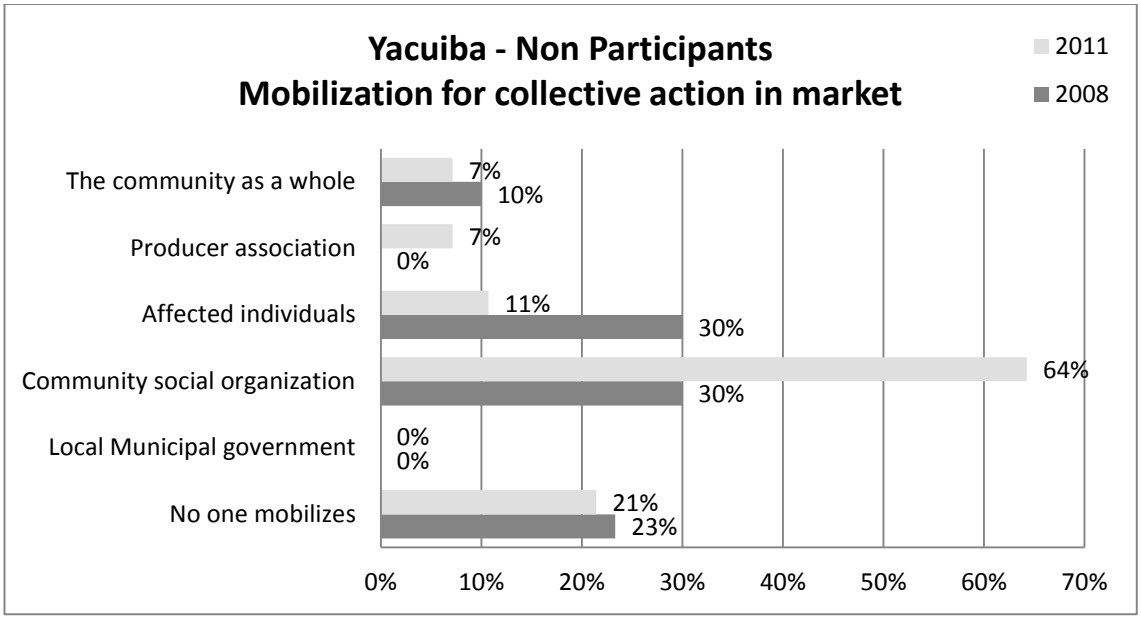
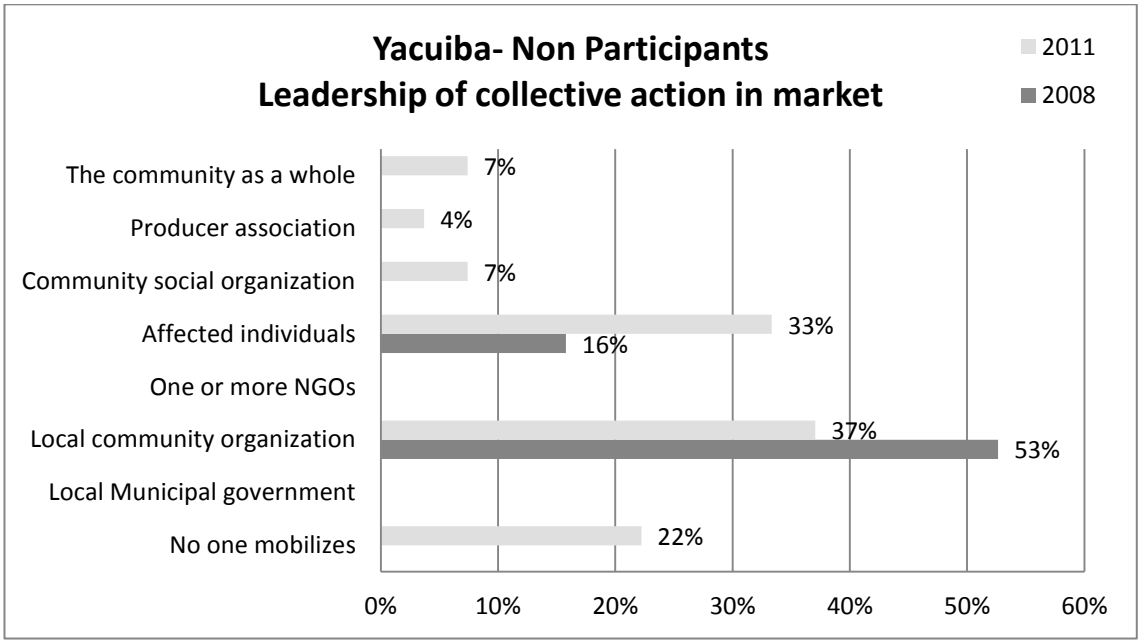


Figure 6.46 Yacuiba: Non-participants leadership for collective action in the market



6.2.4 Solidarity and Reciprocity

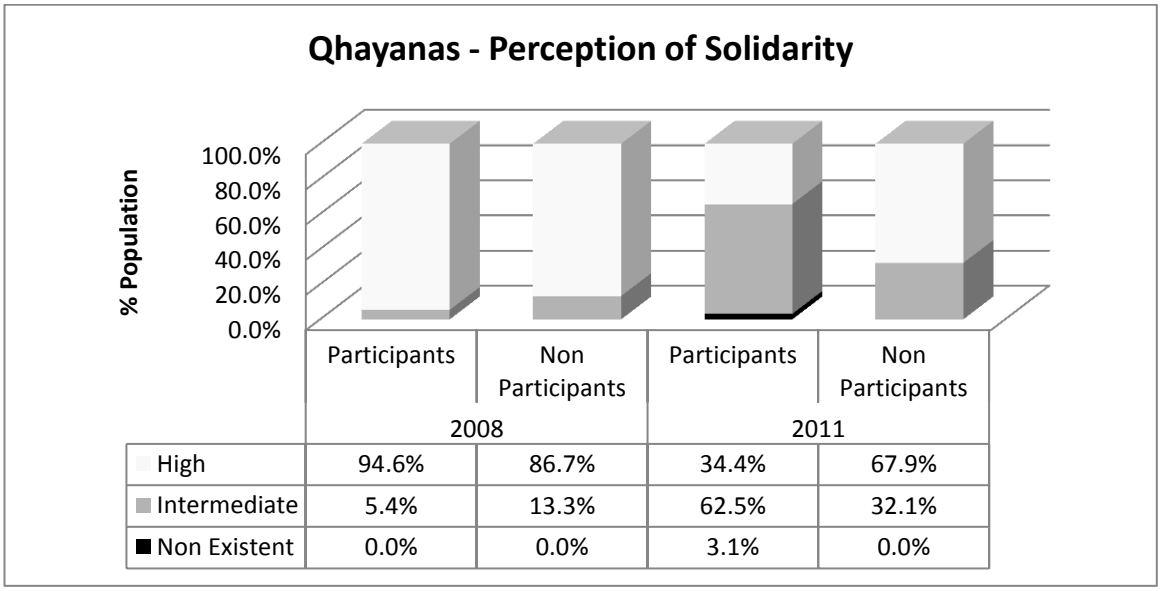
To depict the situation of solidarity and reciprocity two different variables were considered. One is the perception of solidarity and the other is the experience with reciprocity. Both variables contribute to an understanding of social dynamics. The analysis presented below includes some cultural and historic elements along with insights from qualitative data, to visualize changes and their causality.

6.2.4.1 Perception of solidarity

To evaluate the perception of farmers with regards to solidarity, two questions were included in the survey: one asking the sources of labour families relied on for agricultural activities; and the second one asking the reliability of family and friends as a source of labour for agricultural activities. Three levels of perceived solidarity were identified based on the original responses: High, Intermediate and Non Existent. Data shows that farmers in Qhayanas rely heavily on the solidarity of friends and family for agricultural activities (See Figure 6.47). In 2008, 95% of participants and 87% of the non-participants perceived high levels of solidarity. In 2011 the change towards perceiving lower levels of solidarity is evident with only 34% of the participants and 68% of the non-participants perceiving high levels of solidarity.

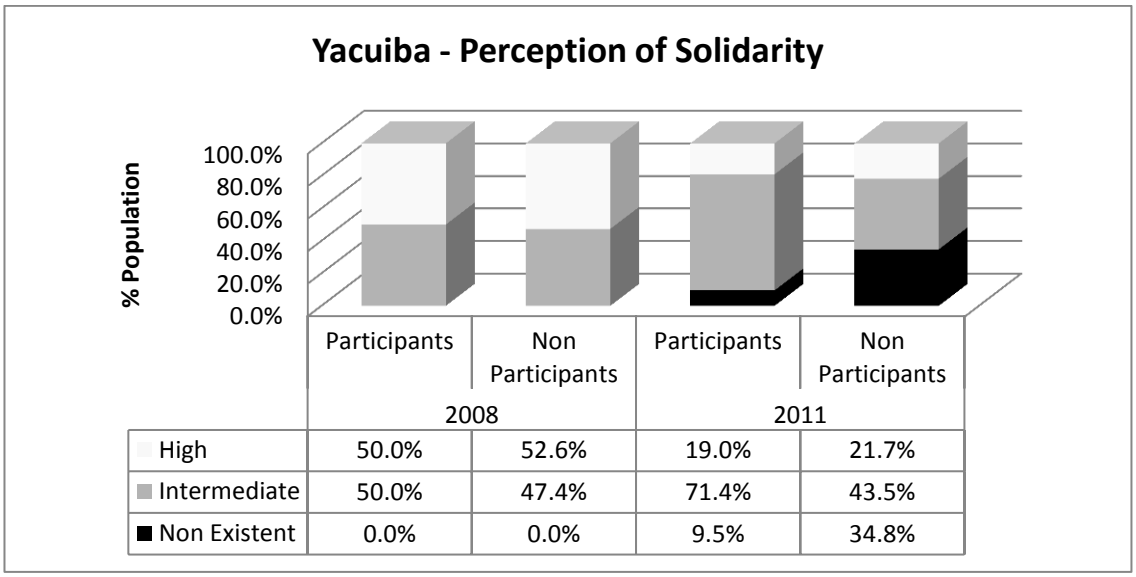
Informal conversations with farmers revealed that practices of collaborative labour *"Minga"*and *"Ayni"* are still very common in the highlands. These practices are a cultural feature that date back to Pre-Columbian cultures (See section 4.2.3 and Table 4.3), where family and community plots were worked collectively. In many communities barter is still a common form of trade and collaborative labour is considered a form of barter. The reduction in solidarity has to do with the reduction in collaborative labour practices.

Figure 6.47 Perception of solidarity in Qhayanas



In Yacuiba there was also reduction in the perception of solidarity. In 2008, 50% of the participants and 52.6% of the non-participants experienced high levels of solidarity, and in 2011 that perception fell to only 19% for the participants and 22% for the non-participants.

Figure 6.48 Perception of solidarity in Yacuiba



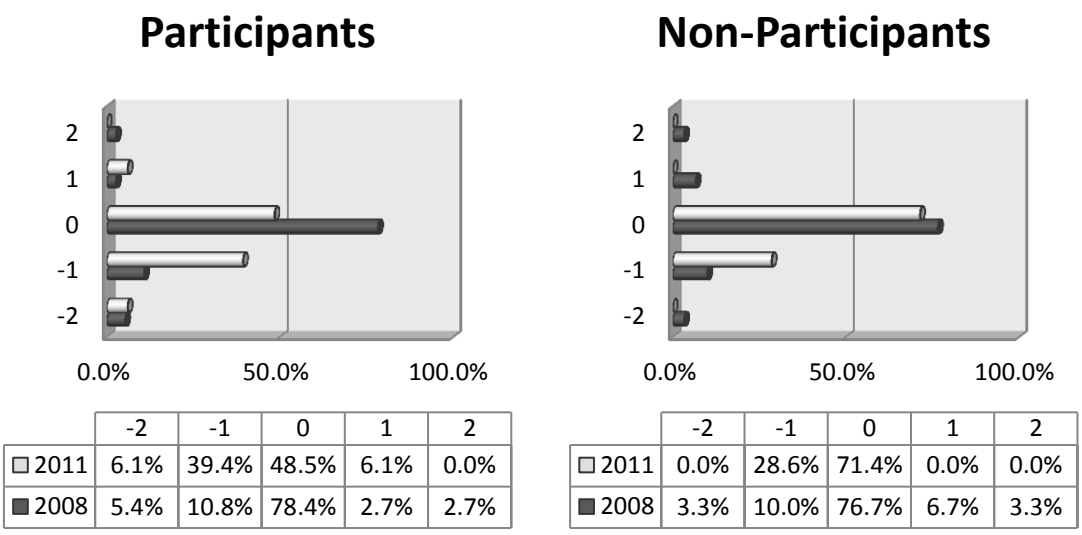
6.2.4.2 Reciprocity experience

To depict the experience of reciprocity families were asked if they had collaborated with relatives and friends in agricultural related activities and the frequency of this collaboration. This was considered as giving and therefore rated with a negative value. Families were also

asked if they had received collaborative help for their agricultural activities from relatives and friends and the frequency of this collaboration. This was considered as receiving and therefore rated with a positive value.

Results presented below show the experience that families have with reciprocity in 5 different levels. If there is total balance in giving and receiving the value is "0". When families give more collaboration then what they receive, the values are negative; and values are positive when they receive more than what they give.

Figure 6.49 Experience with Reciprocity in Qhayanas



	-2	-1	0	1	2
2011	6.1%	39.4%	48.5%	6.1%	0.0%
2008	5.4%	10.8%	78.4%	2.7%	2.7%

	-2	-1	0	1	2
2011	0.0%	28.6%	71.4%	0.0%	0.0%
2008	3.3%	10.0%	76.7%	6.7%	3.3%

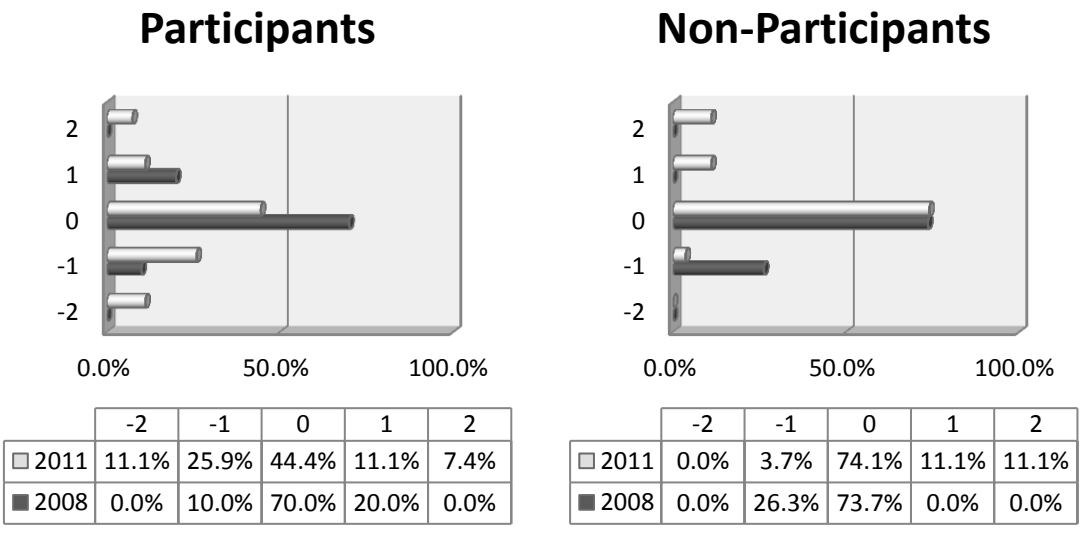
In Qhayanas both the participant and non-participant groups experienced a decline in the levels of reciprocity. In 2008, 78.4% of the participants and 76.7% of the non-participants experienced a "0" value of reciprocity meaning that they gave support and received support for agricultural activities in the same proportion. In 2011 this sense of balance changed particularly in the participant group where less than 50% perceived this balance between giving and receiving, with a stronger shift towards giving more than the received collaboration. In the non-participating group there was also a drop in the perception of balance in collaboration, yet it was of a lesser magnitude in comparison to the participant group. Nevertheless, it is important to mention that most of the changes in the non-participant group implied a shift towards giving more collaboration and receiving less support.

During informal conversations, farmers in Qhayanas explained that there are three different types of farmer status: *Originarios, agregados* and *cantu runas*. This classification of farmers

dates back to colonial times when it served the purpose of defining the level of tribute paid at it referred to *originarios*, *forasteros* or *agregados* and *yanaconas* or *pongos* (Santamaria, 1977). The same system remained through the republican period (Henáiz and Pacheco, 2000) and is still in use by local communities having influence in the election of local authorities and decision making (Beltrán Condori, 2002). Farmers who were born out of a local family and who own their land through family inheritance are called "*Originarios*". Farmers who have bought their land or have acquired access to community land through marriage are called "*agregados*" and farmers with no land who work on different types of arrangements such as split production, rented land or paid labour are called "*cantu runas*". Usually *agregados* and *cantu runas* give out more collaboration to *originarios* in exchange for patches of land either for cultivation or grazing. These relations are continuously fostered by the Ayllu and usually leadership positions are held by *originarios*.

The incorporation of new technological practices focused on enhancing the production in individual land rather than community plots, and the introduction of market principles for surplus has affected community relations.

Figure 6.50 Experience with Reciprocity in Yacuiba



	-2	-1	0	1	2
2011	11.1%	25.9%	44.4%	11.1%	7.4%
2008	0.0%	10.0%	70.0%	20.0%	0.0%

	-2	-1	0	1	2
2011	0.0%	3.7%	74.1%	11.1%	11.1%
2008	0.0%	26.3%	73.7%	0.0%	0.0%

The situation in Yacuiba is very similar where the sense of balance and reciprocity fell from 70 to 44.4% in the participating group, but a different situation took place in the non-participant where the experience with reciprocity had a small increase and people reported receiving more collaboration. The problems with the equipment experienced by the project discouraged participating farmers considerably and this caused them to stop participating in

the project (Cruz V., 2010). When equipment finally arrived it was the non-participating farmers that joined the project and benefited from the technology (Cruz V., 2010) thus enhancing collaboration since they had to share the equipment amongst families.

6.3 Evaluation of Structure

To analyse structure different characteristics of the organization and legal frameworks were identified. Variables of structure include organizational assets such as leadership election, style of decision making, linkages between organizations, formality and membership payments. This section will provide a description of the above variables in order to depict the organization, its operation and the possibility of farmer enrolment.

6.3.1 Leadership election

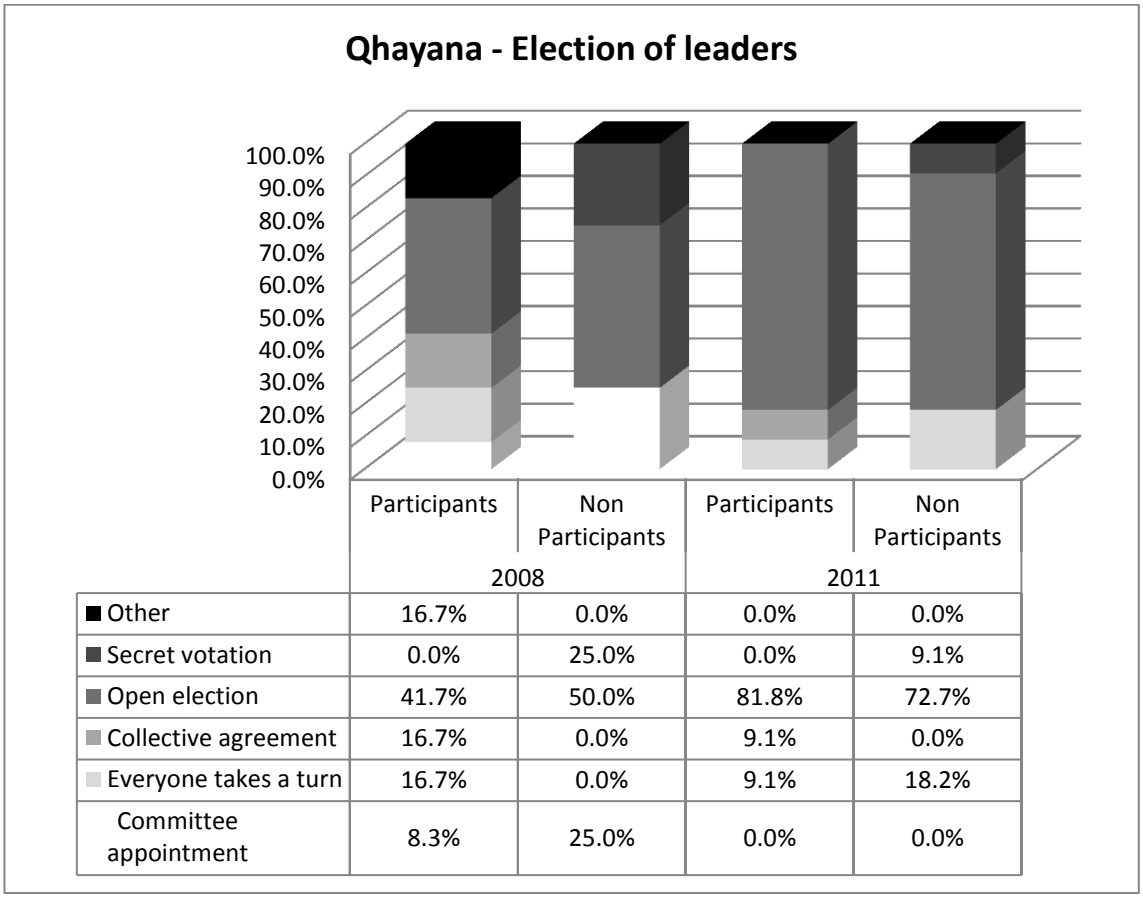
The participatory processes implemented by the project operation in both Qhayanas and Yacuiba had a strong emphasis on democratic election of leaders. In Qhayanas there is a strong cultural tradition that supports the election of community leaders through a combined mechanism of "by turn" meaning that each community member has the obligation to take a turn in being leader, and collective agreement where the community accepts the turn of a certain individual. Furthermore, the traditional Ayllu organization presents some restrictions to the access of a leadership position despite the by turn mechanism. To be appointed leader a male community member must be married because leadership is exercised by both men and women together, the community member must also be an *originario* and must have provided services or supported feasts in the community. Furthermore, the "by turn" system is applicable for community leadership and not strictly for leadership of the aggregation of communities, where experience and influence are highly valued. Yacuiba on the other hand, has no formal tradition of leadership election. Historic accounts mention that indigenous populations had no formal leaders (See section 4.1.2.2), a tradition that was carried on well into the country's republican period (See section 4.1.2.4 sub section i).

During the first survey of 2008 families were asked how leaders were elected in the organization of agricultural activities that they considered most important for their family. Categories include: a) No formal leaders; b) committee appointment, reflecting a leader elected by a specific group; c) everyone takes a turn, as the traditional "by turn" system; d) collective agreement, that implies collective dialogue and negotiation; e) Open election,

reflecting a vote that reveals the individual choice; f) Secret voting; and g) other that may be specified by the interviewee. The changes experienced between 2008 and 2011 are different in both study sites. While in Qhayanas there has been a shift towards open election, in Yacuiba there has been a move towards no formal leaders and committee appointment (See Appendix 5. 14)

Results from Qhayanas show that 41.7% of the participating families and 50% of the non-participating families identified open elections as the main form of leadership election (See Figure 6.51). It is also important to consider that in 2008 many families still considered the Ayllu as the most important organization, thus identifying other forms of leadership election. It is also relevant to focus on the high percentage of "Other" as a different type of leadership election reported by participants in 2008. During conversation with farmers it was identified that the "other" category referred to capacity building by the local NGO. According to 16.7% of farmers it was the process of capacity building referred to the participatory method that defined the leadership in the agricultural related organization, since leaders were to deliver the PM&E methodology to evaluate the intervention. By 2011 a major shift took place towards higher membership in the producer organization as the most important agricultural related organization in the community (See Figure 6.23). Furthermore, in 2011 the category "other" as a form of leadership election disappeared and open election became the main form of leadership election, with 81.8% of participating farmers and 72.7% of non-participating farmers identifying it within the organization.

Figure 6.51 Process of leadership election in Qhayanas



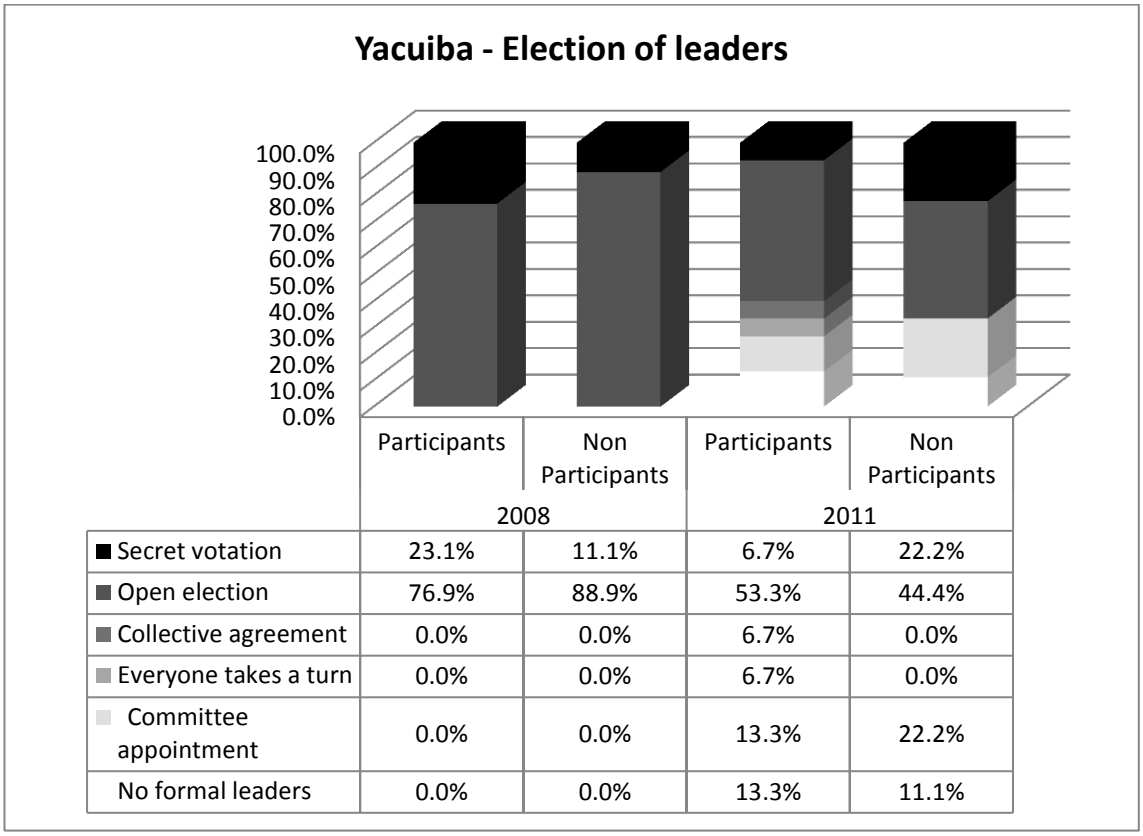
	Participants	Non Participants	Participants	Non Participants
	2008		2011	
Other	16.7%	0.0%	0.0%	0.0%
Secret votation	0.0%	25.0%	0.0%	9.1%
Open election	41.7%	50.0%	81.8%	72.7%
Collective agreement	16.7%	0.0%	9.1%	0.0%
Everyone takes a turn	16.7%	0.0%	9.1%	18.2%
Committee appointment	8.3%	25.0%	0.0%	0.0%

In Yacuiba, due to the multi-ethnic nature of the population and its recent development in the region, there is no traditional or culturally accepted form of organization. Most organizations are formed by common interest and as a means to access specific benefits that would otherwise not be available for individuals. Furthermore, the Popular Participation Law introduces the OTB or Territorial Base Organization as a form of organization recognized by the state to access municipal funds for service delivery and development initiatives.

At the beginning of the participatory intervention in 2008, the form of leadership election by secret vote and open election is widely accepted and practised by farmers in the newly formed community organizations (See Figure 6.52). 76.9% of the participating farmers and 88.9% of the non-participating farmers identify open elections as the common form of leadership election in 2008. By 2011 the project had ended and while some farmers continued to be part of the organization, others migrated and integrated other organizations based on the possibilities of accessing other benefits. Although the perception of the open election system fell to 53.3% in the participating group and to 44.4% in the non-participating group, it still remained as the most common form of leadership election. Additionally it is important to

mention that in 2011 the cultural tradition of individualism in Yacuiba re-emerges, 13.3% of participating families and 11.1% of non-participating families mention that there are no formal leaders.

Figure 6.52 Process of leadership election in Yacuiba



	Participants	Non Participants	Participants	Non Participants
	2008		2011	
Secret votation	23.1%	11.1%	6.7%	22.2%
Open election	76.9%	88.9%	53.3%	44.4%
Collective agreement	0.0%	0.0%	6.7%	0.0%
Everyone takes a turn	0.0%	0.0%	6.7%	0.0%
Committee appointment	0.0%	0.0%	13.3%	22.2%
No formal leaders	0.0%	0.0%	13.3%	11.1%

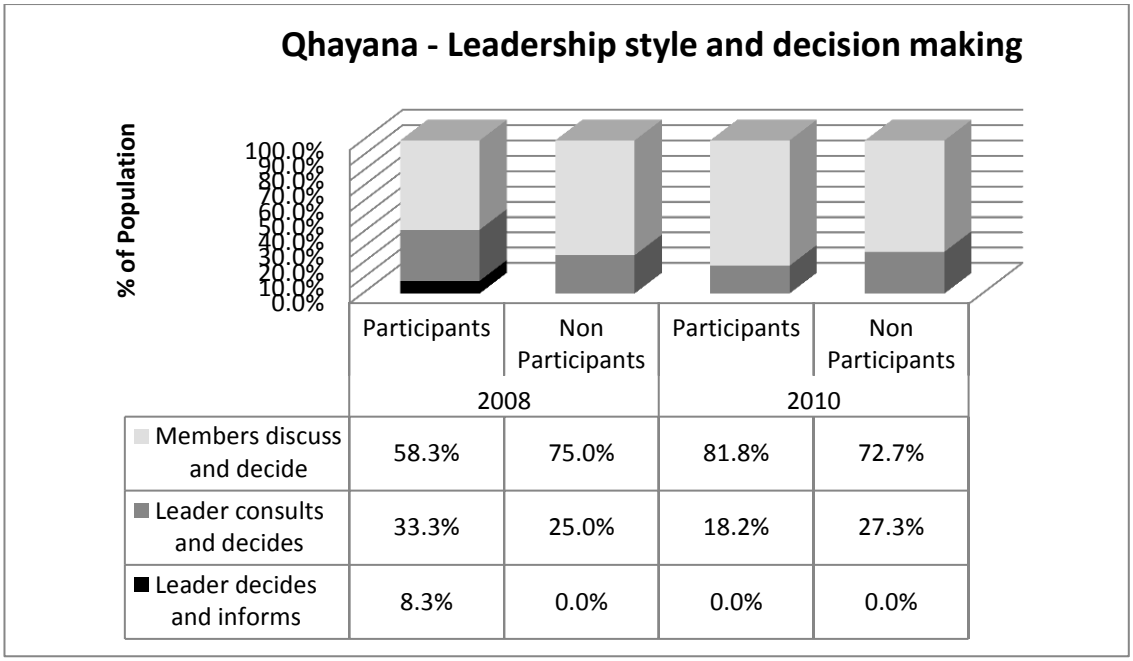
6.3.2 Style of leadership and decision making

In addition to the common practices for the election of the leader, the way that leadership is exercised in the organization can reflect on the nature of structures that govern individuals at local level. Three styles of leadership were included based on the level of participation that they implied (See Figure 2.6): a) Members discuss and decide, as the highest level of participation that implies citizen control and self-mobilization; b) Leader consults and decides, as an intermediate level of participation by consultation; c) Leader decides and informs, with a low level of participation that relies on information giving. The aim of the implementation of the participatory method along with the technology innovation project in both sites was to foster the highest level of participation through direct involvement in decision making.

In Qhayanas the practice of open discussion among and involvement in decision making of community leaders has increased considerably in the participating group from 58.3% in 2008,

to 81.1% in 2011 (See Figure 6.53). The leadership style where the leader decides and informs was perceived by 8.3% of the participant group in 2008 and it decreased to 0% in 2011. This information shows that at the beginning of the project the participating group perceived less horizontal decision making processes situation that changed considerably by the end of the intervention.

Figure 6.53 Perception of leadership style and decision making in Qhayanas

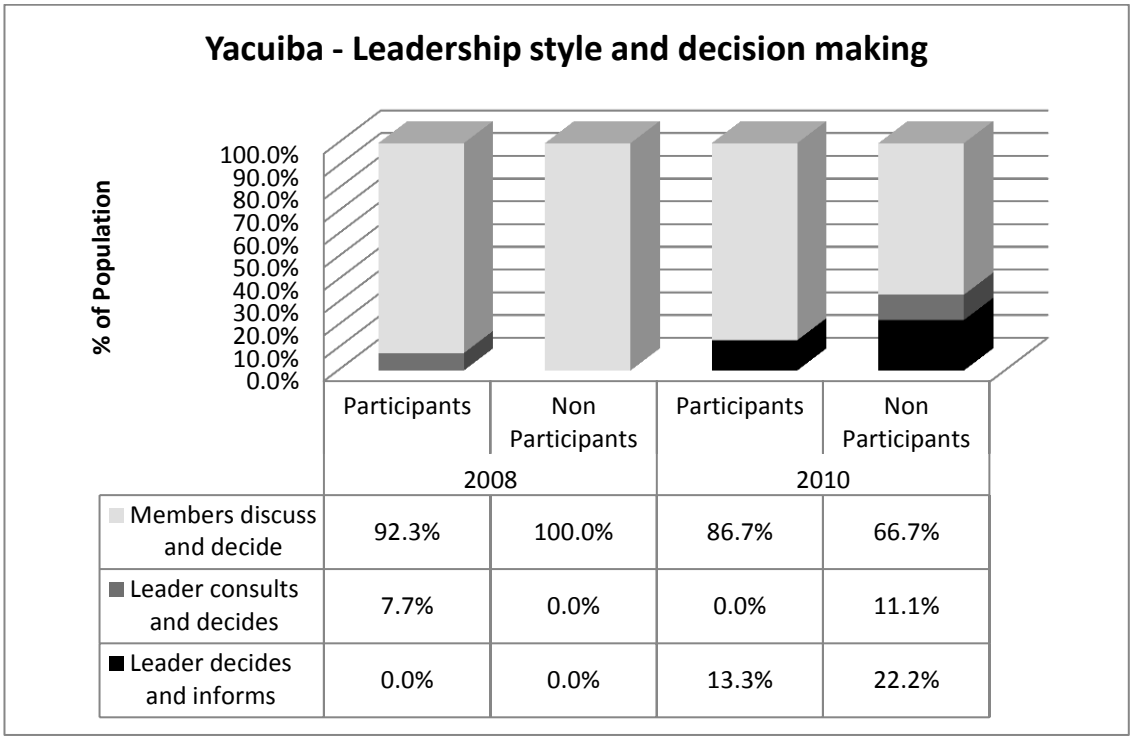


	2008 Participants	2008 Non Participants	2010 Participants	2010 Non Participants
Members discuss and decide	58.3%	75.0%	81.8%	72.7%
Leader consults and decides	33.3%	25.0%	18.2%	27.3%
Leader decides and informs	8.3%	0.0%	0.0%	0.0%

In Yacuiba, the conclusion of the project in 2011 produced changes in farmers' membership status (See Figure 6.23). There was a shift in membership towards different types of organizations that also held different forms of leadership election and exercise of leadership. While in 2008 none of the farmers neither from the participating group nor from the non-participating group perceived the existence of a leader who made decisions on its own and then communicated results, by 2011, 13.3% of the participating farmers and 22.2% of the non-participating farmers perceived a leader that centralized decision making.

In Yacuiba farmers aggregate according to need and potential benefit. When no significant benefit is involved they prefer to save time and avoid being involved in meetings and processes, a trait that is reflected in the natural shift towards a broader spectrum of organizations with different forms of leadership election and exercise.

Figure 6.54 Perception of leadership style and decision making in Yacuiba



	2008 Participants	2008 Non Participants	2010 Participants	2010 Non Participants
Members discuss and decide	92.3%	100.0%	86.7%	66.7%
Leader consults and decides	7.7%	0.0%	0.0%	11.1%
Leader decides and informs	0.0%	0.0%	13.3%	22.2%

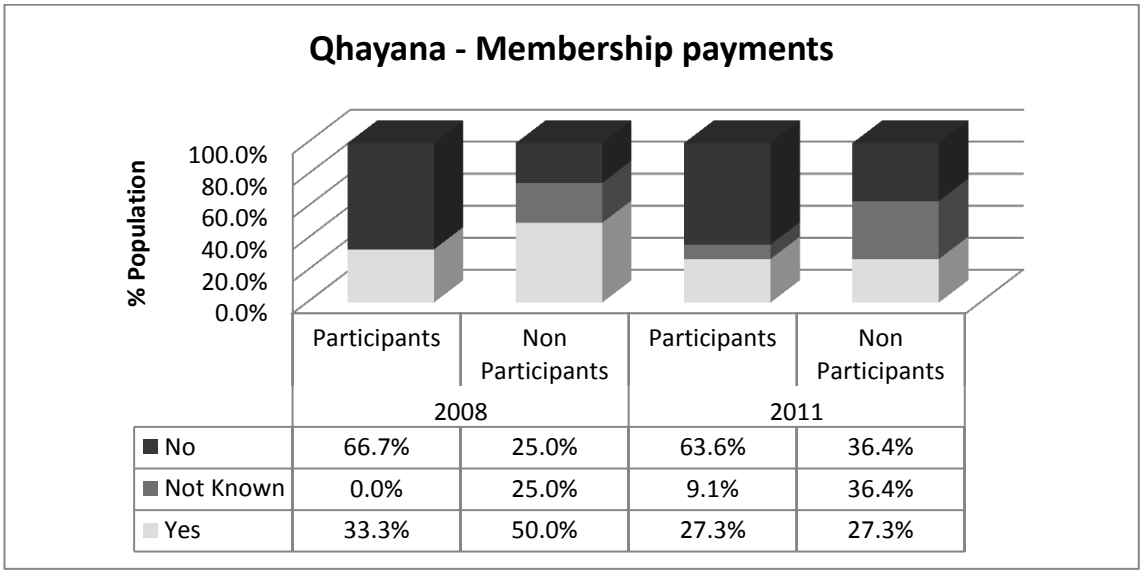
6.3.3 Membership payments

A general constraint that limits the involvement of farmers in organizations is the existence of payments for membership. The innovation projects delivered in Qhayanas and Yacuiba strengthened producer organizations that had no formal membership payments. Nevertheless in some cases charges applied for absences or other punitive circumstances. A detail of the results is presented in Appendix 5. 16.

In 2008, 33.7% of participating farmers from Qhayanas perceived that there were no membership payments, while 33.3% perceived that charges applied to membership (See Figure 6.55). On the other hand, 50 % of non-participating farmers perceived that there were membership payments and 25% were not sure about it, thus feeling discouraged from joining the organization. By 2011 the perception of non-participating farmers changed considerably where 27.3% still thought that membership payments applied and 36.4 % were not sure of the situation. In general the reduction in the perception of existence of payments in 2011 is related to the higher levels of membership in the producer organization reported for that period (See Figure 6.22). It is also important to mention that formally there were no charges

for membership but punitive charges[131] on absences applied and those were perceived by farmers as membership payments.

Figure 6.55 Perception of the existence of payments for organizational membership in Qhayanas

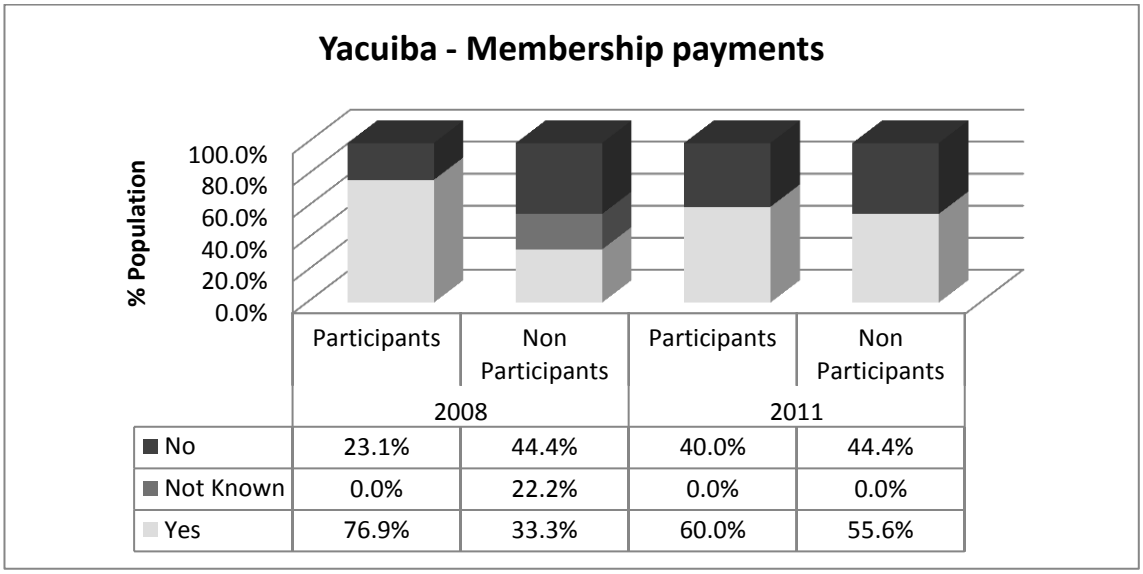


	2008 Participants	2008 Non Participants	2011 Participants	2011 Non Participants
No	66.7%	25.0%	63.6%	36.4%
Not Known	0.0%	25.0%	9.1%	36.4%
Yes	33.3%	50.0%	27.3%	27.3%

In Yacuiba although membership payments did not apply as such, some activities required farmers to purchase inputs or other products which at times created confusion among farmers. Yet the information flow shows that in 2011 there is a better understanding of the no-charge situation. In 2008 23.1% of participating farmers perceived that there were no membership charges, a figure that rose to 40% in 2011. On the other hand, 44.4% of non-participants in 2008 and 2011 perceived that membership payments did not apply.

[131] The amount of punitive charges applied depend on the type of activity conducted. In general for abour activities such as transformation, cleaning or marketing of products charges applied range from 50 to 80 Bs (local currency) or an equivalent of 7 to 11.5$ US.

Figure 6.56 Perception of the existence of payments for organizational membership in Yacuiba

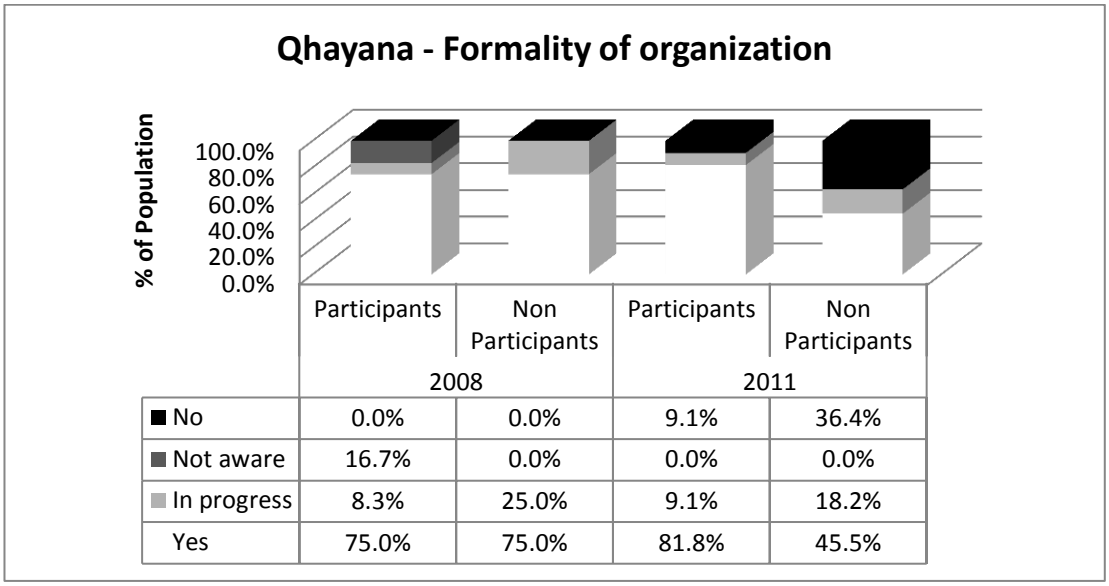


	2008 Participants	2008 Non Participants	2011 Participants	2011 Non Participants
No	23.1%	44.4%	40.0%	44.4%
Not Known	0.0%	22.2%	0.0%	0.0%
Yes	76.9%	33.3%	60.0%	55.6%

6.3.4 Formality status of the organization

The status of formality of an organization is given by its legal recognition according to national regulations, and it enables its access to different governmental levels of decision making, public funds and marketing transactions. In 2008 many farmers in Qhayanas were not aware of the requirements of formality for organizations and most perceived that the formality status had either been achieved or was in progress (See Figure 6.57). It is important to mention that when the project started the organization "APROAQ" was not formally recognized and it was through the action of the project that its legal recognition was processed. Awareness of the formality status of the organization is also a reflection of how much farmers know about the organization and how involved they are with it.

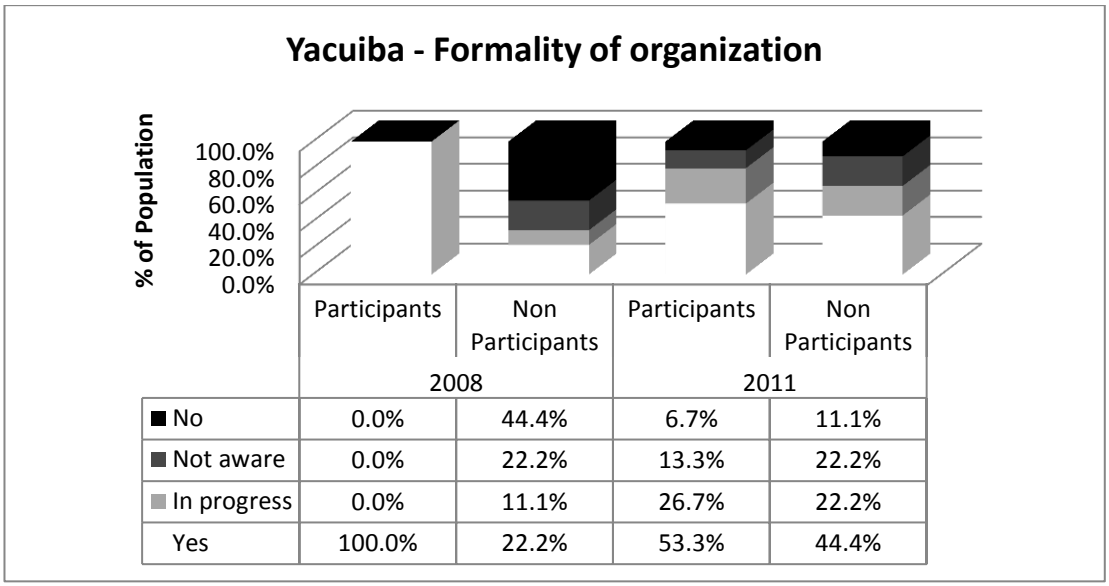
Figure 6.57 Knowledge of organization formality status - Qhayanas



	Participants 2008	Non Participants 2008	Participants 2011	Non Participants 2011
No	0.0%	0.0%	9.1%	36.4%
Not aware	16.7%	0.0%	0.0%	0.0%
In progress	8.3%	25.0%	9.1%	18.2%
Yes	75.0%	75.0%	81.8%	45.5%

The access to a publicly funded project in Yacuiba required a formal legally recognized organization, farmers being well aware of this requirement. In 2008 all participating farmers reported being aware of the formal status of their organization, and only 22.2% of non-participants perceived the existence of formality in their organization (See Figure 6.58). By 2011 the departure of farmers from the initial organizations and their aggregation in newly formed groups (See Figure 6.24) changed the perception of formality status for both the participating and non-participating groups.

Figure 6.58 Knowledge of organization formality status - Yacuiba



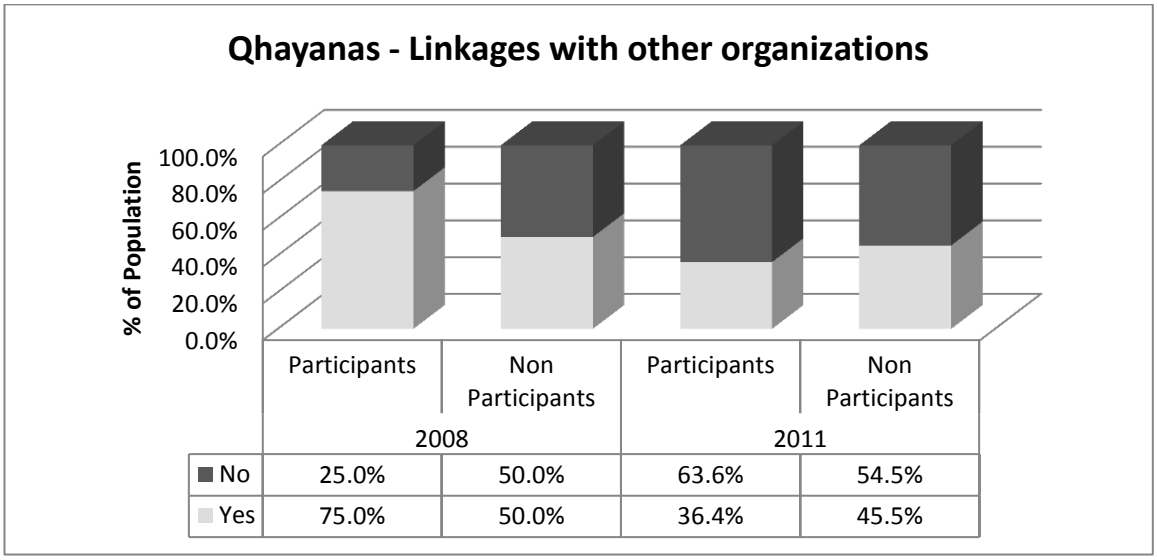
	Participants 2008	Non Participants 2008	Participants 2011	Non Participants 2011
No	0.0%	44.4%	6.7%	11.1%
Not aware	0.0%	22.2%	13.3%	22.2%
In progress	0.0%	11.1%	26.7%	22.2%
Yes	100.0%	22.2%	53.3%	44.4%

6.3.5 Development of linkages with other organizations

Linkages between the local organizations and other organizations depict the structure of society and the possibility of farmers accessing other levels of decision making. During the early stages of project execution, linkages and interactions with other local organizations or groups were fostered and activities were developed in a collaborative way. This is reflected in the high levels of linkages with other organizations that farmers perceived in 2008 (See Appendix 5. 18).

In Qhayanas 75% of the participating farmers and 50% of the non-participating farmers perceived the existence of linkages between the producer organization and other local organizations (See Figure 6.59). By 2011 this perception dropped to 36.4% of participants and 45.5% of non-participants. The lack of linkages in 2011 has to do with the shift in affiliation. In 2008 both participating and non-participating farmers were members of a broad group of productive organizations (See Figure 6.23) some of them with a historic tradition, well defined structures and linkages, such as the Ayllu (See section 4.2.3 and 4.3.1). In 2011 there was a major shift towards affiliation to the newly formed APROAQ as the main productive organization. At this point in time APROAQ had not yet developed a broad range of linkages, participating farmers being more aware of this gap.

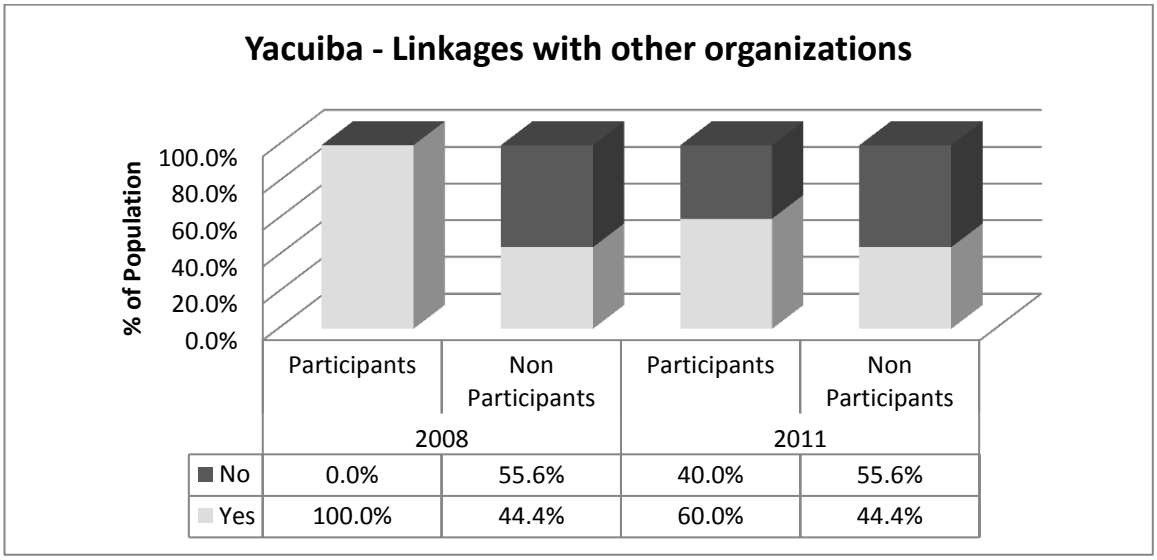
Figure 6.59 Qhayanas - Existence of linkages with other organizations



In Yacuiba the project was a coordination project in nature, hence fostering interaction with different public institutions and private organizations in the Chaco region. This is why in 2008 100% of participating farmers perceive the existence of linkages between the local producer

organization and other organizations while only 44.4% of non-participants shared this perception. In 2011, once the project was over, only 60% of participating farmers perceived the existence of these linkages and no changes were perceived by the non-participants.

Figure 6.60 Yacuiba - Existence of linkages with other organizations



	2008 Participants	2008 Non Participants	2011 Participants	2011 Non Participants
No	0.0%	55.6%	40.0%	55.6%
Yes	100.0%	44.4%	60.0%	44.4%

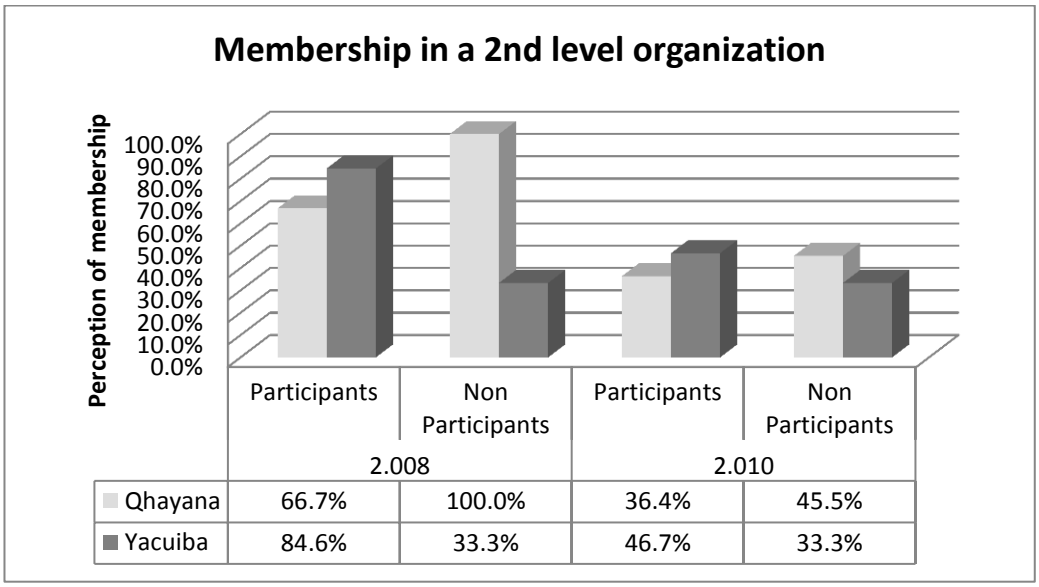
6.3.6 Articulation with 2nd level organizations

Membership in a second level organization reflects a higher level of organization and stability, yet in this particular case it is important to acknowledge that in Bolivia there is a tradition of organization that aggregates community organizations into second tire organizations up to a national level. This is true for the highlands with the Ayllus and Sindicatos Agrarios (See section 4.3.2.1) and is true also for the native peoples of the lowlands (See section 4.5.2.1) but not so common for non-indigenous groups.

The survey results for linkages with a second level organization show that in Qhayanas both the participating and non-participating groups had high perceptions of membership of the organization in a 2nd level organization. This had to do with the fact that in 2008 most farmers still had a strong sense of affiliation to the traditional Ayllu organization. This is also displayed through the data, where 100% of the non-participants in 2008 perceived the membership of their organization in a second level organization and only 66.7% of participants had this same perception. In 2011 with the massive affiliation of farmers into the local producer association (APROAQ), the perception of membership in a 2nd level organization reduces to 36.4% for the participating group and 45.5% for the non-participating group.

In Yacuiba the culture of organizational affiliation is weaker and only communities with a strong indigenous background preserve their forms of organization and are linked with second level organizations up to the national level. This can be clearly observed in the fact that the perception of affiliation to a 2nd level organization of the non-participant group does not change from 33.3 % in both 2008 and 2011. The perception of the participating group on the other hand reduces from 84.6% in 2008 to 46.7% in 2011. This reduction can be related to the conclusion of the project and the changes in membership experienced by the participants.

Figure 6.61 Articulation with 2nd level organizations perceived by members



6.4 Integrating results on agency and structure variables

The previous sections present a detailed description of changes in different variables of individual and collective agency, and structure (See Table 3.2). It also analyses how and why changes have taken place between 2008 and 2011 in both study sites. Furthermore, it elaborates on project intervention and other contextual factors that influence these changes. The present section will summarize and integrate the different variables in order to consolidate a general depiction of changes in both study sites.

6.4.1 Bringing together variables of agency at the individual level

This section presents a general perspective of changes in variables of agency at the individual level analysed in section 6.1 of this chapter. Changes on every variable are shown through

positive (+) and negative (-) symbols. The number of symbols reflects on the degree of changes manifested (See Table 6.1).

When analysing variables used to depict agency at the individual level we can see that participants in both Qhayanas and Yacuiba have experienced reduction in the perceived levels of influence inside and outside the community. Non-participants in contrast have experienced higher levels of influence particularly inside the community. In Qhayanas these phenomena are regarded as a result of growing envy towards the advancement of participating farmers (See Quote 12) in a collectivist and equalizing society. The same phenomenon in Yacuiba is a result of the equipment conflict that discouraged participating farmers but benefitted non-participants as “free-riders”.

Access to both communication and transportation, have followed similar trends in both Qhayanas and Yacuiba. The improvements in communication are a result of a national policy that enabled better coverage at the national level. The access to transportation has been affected by different contextual variables in both sites. While in Qhayanas it is a result of the car smuggling conflict, in Yacuiba it is an issue of road deterioration while demand continues to grow. In both cases the causes and outcomes lie beyond the project intervention.

Table 6.1 General overview of changes in variables of agency at the individual level, between 2008 and 2011

Agency-individual level variables	Qhayanas		Yacuiba	
	Participants	**Non-Participants**	**Participants**	**Non-Participants**
Psychological assets				
Influence in the community	- - -	+ + +	- - -	+ + +
Influence outside	- - -	- (0) +	- -	+ + +
Information assets				
Communications	+ +	+	+ +	+ +
Transportation	- - -	- - -	- -	- -
Material assets				
Land size	- -	- -	- - -	- - -
Land tenure system	Owned + Rented + Division -	Owned + Rented - Division -	Owned - Rented + Division -	Owned - - Rented + + Division +
Irrigated land cultivation	- -	-	- - -	- - -
Access to durable goods	-	+	+ +	+ +
Tool ownership	+ +	+	- - -	+ + +
Financial assets				
Family income	- -	- -	- -	(- 0 +)

(+) an increase of less than 5% towards higher ranks
(++) an increase between 5 - 20% towards higher ranks
(+++) an increase above 20% towards higher ranks
- (0) + convergence towards central ranks
(-) a reduction of 5% from higher ranks
(- -) a reduction between 5 - 20%from higher ranks
(- - -) a reduction above 20% from higher ranks
(=) no changes
(- 0 +) flow towards extreme ranks

Land size, tenure system and irrigation have also been strongly influenced by political, environmental and contextual variables. The main influencing factors in Qhayanas seem to be the land management systems used by the communities, which vary from year to year and follow cycles of several years, and the drought experienced during 2011. In Yacuiba, on the other hand, where conflicts over land have been latent for centuries (See sections 4.1.2.2 and 4.4.3), farmers are prone to reporting smaller size of land because of fear of intervention or reversion by the state.

A somewhat clear representation of changes in material assets is given by self-reports of access to durable goods and tool ownership. In Qhayanas, extreme poverty restricts access to

durable goods in general yet in 2011 we can appreciate an increase in tool ownership particularly in the participating group.

In Yacuiba the more favourable environment for the development of a market oriented economy is reflected on the positive changes in ownership of durable goods for both participants and non-participants. Tool ownership on the other hand has largely increased for the non-participants due to their access to equipment provided by the project, but decreased in the participant group as a reflection of the conflict over equipment experienced with the Departmental Government and the service providers.

Although a general decrease in family income is perceived in both sites, the non-participating group in Yacuiba, who perceived a high level of positive increase in tool ownership, has also experienced changes in family income towards extreme levels. In this group the middle income families have shifted either to either higher or lower income levels, thus increasing the gap and differences between those who have more and those who have less.

6.4.2 Bringing together variables of agency at the collective level

This section presents a summary of changes in variables of agency at the collective level analysed in section 6.2 of this chapter. As in the previous section, changes on every variable are shown through positive (+) and negative (-) symbols. The number of symbols reflects on the degree of changes exhibited (See Table 6.2 and Table 6.3).

There have been some changes between 2008 and 2011 in organizational assets as well as in social relations for both study sites. Farmers in Qhayanas and Yacuiba have expressed different responses to the establishment of producer organizations.

In Qhayanas the new agricultural related organization "APROAQ" started working with participants farmers in 2008. The success of the work achieved with participants generated an increase in affiliation to APROAQ with special emphasis on non-participants. Although most of the benefits provided by the project through APROAQ ceased at the end of 2011, affiliation remained high due to two benefits: a) some support for processing and marketing provided to project participants by the NGO through a permanent store established in the city of Llallagua, and b) a revolving fund[132] provided by the NGO that was managed by the organization.

[132] The rotation fund was introduced by the NGO and does not exceed 300$US. It provides small amounts of credit for families and is not necessarily related to agriculture.

Social relations have also changed in Qhayanas. Solidarity and reciprocity are culturally persistent traits that emerged in the face of severe climate constraints. Limitations in access and service provision have continued to foster these traits. After the project implementation the perception of solidarity evidently dropped in the participating and non-participating groups; the experience with reciprocity on the other hand changed to more unequal relations in the participating group and to more equal relations in the non-participating group. This is related to the Andean worldview where equity is an important component and it implies sharing benefits and achievements with the whole community. A famer who is regarded as well off is expected to share with others. The introduction of market concepts has reduced the predisposition of farmers to reciprocal exchange in the participating group, yet some forms of reciprocal relations such as the exchange of labour are expected in some cases. Farmers who hold the status of *originarios* are bound to receive support due to their status or to the land they provide others with, yet not so strongly obliged to giving it. Usually *agregados* and *canturunas* are expected to give support yet they will not necessarily receive it in the same proportion. In the non-participating group changes have moved towards more reciprocal relations among farmers.

In Yacuiba the situation was different. Historically there has never been a strong organizational culture in Yacuiba, thus affiliation is usually encouraged by the perspective of benefits. Affiliation to an agricultural organization has decreased from 2008 to 2011 mainly due to project conclusion. Nevertheless we can see that involvement with PROINPA has increased. In 2008 farmers reported working with PROMyM that was the main project delivered by PROINPA, financed by the Departmental Government and supported by the Swiss cooperation COSUDE. Throughout the period when the Departmental Government did not disburse funds for either operation or investment, and the subsequent dropout of farmers, the project management system changed and opened its technical assistance to groups of farmers independent of their previous project affiliation, thus increasing affiliation and participation in the groups who worked with PROINPA. This change is observable in the survey data very clearly because in 2008 farmers mentioned PROMyM as the organization but in 2011 PROMyM is not mentioned at all and replaced entirely by PROINPA as an NGO based affiliation. Fluctuation in membership is high and dependent on the possibility of accessing different types of benefits.

Social traits such as solidarity and reciprocity have also changed in Yacuiba after the project intervention. There has been a general decrease in the perception of solidarity for both the

participants and non-participants. Reciprocity on the other hand has changed unevenly for both groups. Participants perceive less reciprocal relations while non-participants perceive changes towards more reciprocal relations. This has to do with the introduction of new equipment in the community organizations. Where many participants stopped attending, non-participants that benefited at the end of the project practiced reciprocal exchange to successfully make shared use of the equipment provided.

Table 6.2 General overview of changes in variables for agency at the collective level (organizational assets and social relations) between 2008 and 2011

Variables for agency at the collective level	Qhayanas		Yacuiba	
	Participants	Non-Participants	Participants	Non-Participants
Organizational Assets				
Membership status	+	+ + +	- -	- -
Main organizations	APROAQ +++	APROAQ +++	PROINPA + + Women C + + Asopromani -	PROINPA + + Women C - - - Asopromani + +
Perceived benefits	-	- - -	- - -	- - -
Non specified		- - -	- -	- -
Market Income	- - -	- - -	- -	
Information	- - -	- - -	- - -	-
Marketing support	- -	- - -	- -	- -
Processing support	+ +	- - -	- - -	- -
General Credit	+ + +	+ + +	- -	- -
Agricultural Credit	- -	- - -	- - -	- -
Ease in input purchase	- - -	- -	+ +	+ + +
Technology, knowledge	- - -	- - -	+ +	- -
Food	- - -	- - -	-	- -
Social relations				
Solidarity	- - -	- -	- - -	- - -
Reciprocity	(-0 +)	- - (0) +	- - -	- (0) ++

(+) an increase of less than 5% towards higher ranks
(++) an increase between 5 - 20% towards higher ranks
(+++) an increase above 20% towards higher ranks
- (0) + convergence towards central ranks
(-) a reduction of 5% from higher ranks
(- -) a reduction between 5 - 20%from higher ranks
(- - -) a reduction above 20% from higher ranks
(=) no changes
(- 0 +) flow towards extreme ranks

There is high variability in the dynamics of mobilization and leadership for collective action in both Yacuiba and Qhayanas, yet some cultural and historic traits of society have influenced the perception of farmers. In Qhayanas the strong collectivist culture where historically farmers have been part of the Ayllu as a form of organization has structured community life and agricultural processes. With the disaggregation of community land into individual plots, and the introduction of the market economy, the Ayllu lost some of its strength in directing

agricultural activities, thus focusing on political claims. The introduction of APROAQ as an entirely agricultural oriented organization has created high expectations from farmers and has motivated a wide affiliation. For the participating group in Qhayanas, the local community organization represented by the Ayllu in 2011 is less regarded as capable of mobilizing and leading collective action in the agriculture and market sectors in comparison to 2008. The non-participating group on the other hand does perceive some possibility of mobilization but perceives observably less leadership of the Ayllu in issues of agriculture and market. According to both, the perception of the participating and non-participating groups in Qhayanas, the role of mobilization and leadership for collective action in agriculture and market has been capitalized by the producer association APROAQ and the operating NGOs. Individuals have become less likely to mobilize but more capable of leading initiatives of collective action if directly affected. In general farmers have become less prone to mobilizing and leading initiatives.

In Yacuiba the processes of colonization and migration have brought together different ethnic groups. Traits of collectivism exhibited by the different groups have subsided to individual market interests. The community organization becomes operational when there are opportunities for accessing direct or indirect benefits. Farmers fluctuate in their membership of organizations depending on the possibilities of immediate or future benefits emerging. In the agricultural sector both the participant and non-participant groups have decreased in their perception of mobilization for collective action. In the participating group, the experience of continuous mobilization with unfruitful results has also created a perception of less likelihood of individual leadership for collective action in agriculture. The non-participating group on the other hand, through their late inclusion in the project were able to benefit individually thus perceiving an increase in the individual leadership for collective action in agriculture.

In the market sector, high demand on maize and groundnuts has produced a positive environment where project initiatives produced positive outcomes. In this framework both the participating and non-participating groups perceive an increase in the leadership of individual producers for collective action, while at the same time they perceive less possibility of individuals to mobilize collectively.

Table 6.3 General overview of changes in mobilization and leadership for collective action in agriculture and market between 2008 and 2011

Actors that mobilize or lead collective action	Qhayanas				Yacuiba			
	Participants		Non-Participants		Participants		Non-Participants	
	M	L	M	L	M	L	M	L
Agriculture								
Other actors					- -	+ +	- -	+ +
The community as a whole	- -	+	- -	+	+	-	-	+
Com. Social Organization	0	0	+ + +					
Producer Association	+	+ +	-	+ +	+	- -	0	0
Affected individuals	- - -	+ +	- - -	+ +	- - -	- -	- - -	+ + +
One or more NGOs	+ +	+ +	0	+ +				
Local Community Org.	- - -	- - -	+	- - -	+	0	- - -	- - -
Local Municipal Gov.	- -	- -	+	- -	-	-	+	-
No one mobilizes/leads	+ + +	+ + +	+ +	+ + +	-	-	+ +	+
Market								
The community as a whole	+	+	+ +	+ +	-	+ +	-	+ +
Com. Social Organization	+ +	+ +	+ + +	+ +	+ +	+	+ + +	+ +
Producer Association	+ +	+ +	+ +	+	+		+ +	+
Affected individuals	-	+	- - -	- -	- -	+ +	- -	+ +
One or more NGOs	0	+ +	+	+ + +		+		
Local Community Org.	- -	- - -	+ + +	- -		+		- -
Local Municipal Gov.	- -	-	+	+ +	+	+		
No one mobilizes/leads	+ + +	+ + +	- - -	+ + +	+ +	+ +	-	+ + +

M is mobilization, L is leadership

(+) an increase of less than 5% towards higher ranks
(++) an increase between 5 - 20% towards higher ranks
(+++) an increase above 20% towards higher ranks
(-) a reduction of 5% from higher ranks
(- -) a reduction between 5 - 20%from higher ranks
(- - -) a reduction above 20% from higher ranks

6.4.3 Bringing together structure variables

The project intervention has had both short and long term effects on some structural variables (See Table 6.4). In Qhayanas the system of open election of leaders, although previously present in the region, was fostered by the project. In 2011 after the project conclusion both participating and non-participating farmers reported a considerable increase in the use of the open election system. In Yacuiba on the other hand, the open election and later on the secret voting systems were fostered. After the project conclusion in 2011 people reported decrease in the usage of the open election system and some decrease in the use of the secret voting system, while only the non-participating group reported some increase in the usage of the secret voting.

Table 6.4 General overview of changes in structure variables collected from individual perceptions between 2008 and 2011

Structure variables Individual perception	Qhayanas		Yacuiba	
	Participants	Non-Participants	Participants	Non-Participants
System of leadership election in organization				
Other (Capacity building)	- -			
Secret vote		- -	- -	+ +
Open election	+ + +	+ + +	- - -	- - -
Collective agreement	- -		+ +	
Everyone takes a turn	- -	+ +	+ +	
Committee appointment	- -	- - -	+ +	+ + +
No formal leaders			+ +	+ +
Leadership style and decision making				
Members discuss/decide	+ + +	-	- -	- - -
Leader consults/ decides	- -	+	- -	+ +
Leader decides and informs	- -		+ +	+ + +
Membership payments				
Existence of payments	-	- - -	- -	+ +
Existence of linkages of partnership or further articulation with other organizations				
Existence of linkages	- - -	- -	- - -	=
2nd Level membership	- - -	- - -	- - -	=
Formality status of the organization				
Formally established	+ +	+ + +	+ +	- - -
Formality in progress	- -	- -	+ +	=

(+) an increase of less than 5% towards higher ranks
(++) an increase between 5 - 20% towards higher ranks
(+++) an increase above 20% towards higher ranks
- (0) + convergence towards central ranks

(-) a reduction of 5% from higher ranks
(- -) a reduction between 5 - 20%from higher ranks
(- - -) a reduction above 20% from higher ranks
(=) no changes
(- 0 +) flow towards extreme ranks

In Qhayanas there is a convergence towards a single producer organization that gradually aggregates the community and turns its process into culturally repetitive practices (open election practice) and into formal structures (increase in formality status of the organization). In Yacuiba aggregation is dynamic and fluctuating depending on individual interests and where individual benefits are more important than group practices.

In Qhayanas the PM&E practices of participation have been capitalized by the participant group and considerable increase in the processes of leadership and decision making that focus on membership discussion and group decision making is perceived beyond the project conclusion. In Yacuiba on the contrary although participatory leadership and decision making were fostered by the project, its conclusion produced a shift towards different modes of leadership and decision making, based on an adaptation to the common systems used by other

organizations and the need to make the most efficient use of time, thus restricting participation to the initiatives that will produce the highest positive outcome or benefit.

The changes in agency and structure variables that have taken place between 2008 and 2011 are related to both the project implementation and to historic and cultural patterns that repeat over time. The sense of empowerment experienced by farmers is related to variables of agency and structure and to the historic and cultural context where processes take place. Chapter 7 will present conclusions that elaborate on how perceptions of empowerment, agency and structure, and historic-cultural patterns integrate in empowerment processes; and how they relate to different types of power. Based on these conclusions, some recommendations will be formulated to support the operation of development processes that foster empowerment. Finally, some novel findings will be presented with recommendations on new directions for future research.

Chapter 7. CONCLUSIONS

This thesis analysed how participation and empowerment relate to each other under culturally and historically different contexts, within the agricultural technology innovation sector in Bolivia. It used quantitative methods to explore the sense of empowerment and the changes in assets that emerge from the application of a participatory method, and qualitative methods to understand processes and outcomes in culturally and historically different contexts. The findings provide a more nuanced perspective on the sense of empowerment and the factors that affect it, by documenting not only if people feel more or less empowered, but also in what ways they experience changes in the sense of empowerment; how agency and structure variables change throughout the process; and the role of culture and history in the system. This chapter begins by presenting the core findings of the research and elucidates how participation for empowerment can produce a widening of consciousness despite positive or negative effects on the actual sense of empowerment. Secondly it synthesises results and conclusions for the three questions that guided the research. The third section of this chapter presents methodological reflections emerging from hindsight of the experience, and that may contribute to guide future research processes in the future. Finally, based on the questions that the thesis has opened, some new directions in research are suggested.

7.1 Novel finding: Widening consciousness and "need" as a first step towards empowerment

One of the most relevant findings of this research is that participation was not empowering for project participants. Farmers felt less empowered after an intervention that sought to promote empowerment through participation. This finding is apparently counterintuitive and not consistent with either the expectations of the international implementing organisations or the prevailing political discourse. Furthermore, this sense of lower empowerment transcends positive perceptions of farmers regarding the implementation of the participatory method and the innovation project.

Although the principle of "critical consciousness" developed by Freire assigns individual agents power capable of transforming structures and creating new development paradigms, this power of agents can be hindered or enhanced through the nature and persistence of structures that exercise "Power – over" individuals and the collectivity. The exercise of

participation in Qhayanas and Yacuiba fostered skills and capabilities of farmers to question, negotiate and act upon their needs individually (Power from within) and collectively (Power-to). Yet the changes in structures require much more. In the face of restrictive structures, the development of skills and capabilities promoted by participation create a gap or a need, which can be perceived as a lower sense of empowerment. This emerging "gap", mirrors what in social marketing terms would be called "needs-creation". It is an enhancement of knowledge and awareness that leads to the perception of a gap, or a need, that would have otherwise not been perceived; the gap is of "great expectations" that are unrealised, resulting in disillusion. Thus, there can be an absence of 'spaces', or what amounts to a lack of opportunities within an unfavourable external environment (provision of adequate social agricultural services, access to viable markets) which causes frustration rather than a sense of empowerment.

The "need" created is actually a widening of critical consciousness and a first step towards higher levels of empowerment. Farmers that perceive lower levels of empowerment have experienced through SEP the possibility of having voice and choice in the agricultural innovation sector, thus creating high expectations for the future. Restrictions for further exercise of this voice and choice create a feeling of withdrawal. This "need" manifested through a sense of lower levels of empowerment is a turning point that leads to conflict, and can be the seed of change towards actual empowerment. The challenge is to create supporting environments that respond to this widening of critical consciousness, enabling empowerment, technology innovation and development.

The question here is if, and how much power are decision makers willing to sacrifice in order to create this enabling environment. Perhaps the question is even stronger and goes beyond the willingness of decision makers to sacrifice power. The question is probably, what will this widening of consciousness produce in farmers' and what are they willing to do in order to fulfil the "need" to have their opinions heard and their demands addressed?

7.2 The research questions in the light of the novel finding

This section synthesises results and conclusions for the three questions that guided the research, relating each question with the creation of the "need" as core argument of this thesis.

7.2.1 How does the exercise of participation through SEP affect the sense of empowerment within the agricultural technology innovation sector, in two contrasting sites of Bolivia?

The exercise of participation has a negative effect on the sense of empowerment when opportunities to exercise choice are limited or non-existent, or foreclosed through changes in the external environment. The study shows that in the agricultural sector the farmers participating in the study projects experienced lower levels of empowerment than non-participating farmers by the end of the study period in 2011.

In Qhayanas, although farmers and project staff regarded the project as a positive and successful one in terms of innovation outcomes, the spaces to exercise choice and to use the participatory tools were limited, thus leaving farmers with a lower sense of empowerment. In Yacuiba lower levels of empowerment emerged from disappointment after the initial high expectations of a participatory process prompted an active enrolment in the project, with no positive responses from departmental authorities. Furthermore, farmers participating actively perceived barriers that limited their full involvement in decision making. As a consequence, participating farmers that actively negotiated the fulfilment of commitments without positive responses, felt frustrated and less empowered in 2011. In both cases farmers gained knowledge and skills to be actively involved in their own development processes but spaces such as general health and education services, and specifically agricultural services were restricted due to structural, environmental or political factors.

When structures are less restrictive and offer opportunities for development, the exercise of participation can be expected to enhance the sense of empowerment experienced by farmers. Data from the study shows that the sense of empowerment in relation to market linkages was enhanced in Yacuiba where environmental conditions favoured the production of staple crops with a high market demand. Initiatives for transformation and collective marketing produced positive outcomes, and both participants and non-participants experienced an increase in the sense of empowerment. On the contrary, in Qhayanas farmers acquired new transformation, negotiation and marketing skills, yet structural restrictions such as environmental constraints and lack of services affected the production and marketing of surplus goods, thus producing a general sense of dismay and lower levels of empowerment in relation to market linkages.

Based on these elements of analysis we can conclude that the exercise of participation through SEP enhances the sense of empowerment experienced by farmers only when context and structures present enabling circumstances. When restrictive structures and contexts are present, there will be a counter effect.

7.2.2 What is the effect of participation through SEP on structure and agency as components of empowerment within the agricultural technology innovation sector, in two contrasting sites of Bolivia?

Changes in agency and structure were evaluated through asset based components. Different types of assets relate to different types of agency and structure (See Table 2.4 andTable 3.2). Individual agency is related to assets that influence the individual directly. Collective agency is essentially related to social assets. Structure on the other hand is related to organizational assets.

Changes in agency variables differ according to region and the participation status of farmers. In Qhayanas agency variables in general reinforced some collectivistic traits (Power with) while in Yacuiba changes vary and reinforce mainly individual concientization (Power from within).

7.2.2.1 Components of individual Agency: Power from within

Different internal and external factors influence components of agency at the individual level. The study considers psychological, information, material and financial assets as components of individual agency (See Table 3.2).

Psychological assets were influenced by two polar forces: the project intervention and, cultural and political issues. Projects implemented in both study sites had capacity building components that sought to strengthen farmers' negotiation abilities and open spaces for the exercise of choice: "Power from-Within". On the other hand the cultural trait of collectivism in Qhayanas, and hierarchical structures of decision making in the Departmental Government in Yacuiba acted as opposing forces of "Power-over". The conflict generated by the two opposing forces produced a reduction in the level of psychological assets that farmers perceived.

Despite the influence that information, material and financial assets can have on power from within and the perception of empowerment, according to theoretical standpoints, the study shows that the implementation of a participatory process through the SEP method had no effect on these types of assets. Information, material and financial assets are strongly

influenced by external factors such as historic trends and national policies, and partially influenced by development interventions.

From the data analysed we can conclude that participation exercised through SEP influences power from-within and the general perception of empowerment, mainly through its effect on psychological assets. It is in psychological assets that we can observe the greatest effect of the "needs creation". It is also the area where the SEP methodology targeted most of its efforts. Farmers who saw and experienced an involvement in the decision making regarding technological innovation processes, became disillusioned and frustrated when unable to replicate the experience.

7.2.2.2 Components of Agency at the collective level – Power With

Agency at the collective level was evaluated through social assets (See Table 2.4 and Table 3.2). Different internal and external factors influence variables related to social assets, yet in general the influence of the participatory method implemented is evident.

This study shows that the project intervention and the application of the SEP participatory method in both study sites did influence changes in organizational assets. Nevertheless, this influence has been shaped by existing structures of power, history and culture. Data shows that in Qhayanas, farmers have strongly moved toward a single farmer organization that addressed agricultural and market related issues. This organization, APROAQ, was fostered by the project intervention and was also a subject of the implementation of the SEP participatory method. While this does not affect the traditional membership in the Ayllu, it does show that in 2011 farmers visualized their membership in the new organization as one that can support agricultural and market issues more efficiently than their traditional community organization. Most of the benefits that the organization provided during the operation of the project declined in 2011, yet the possibility of support for processing and credit have increased and are thought to be a cohesive factor for the consolidation of the organization. The situation is different in Yacuiba where there is less tradition of organization among communities. Although the project was negotiated by a local organization, after the intervention, membership fluctuated according to the benefits offered by the different organizations. The conclusion of the project in 2011 brought a shift towards new organizations that were able to address different needs, the most important being the ease of input purchase and the access to technology and knowledge.

While some benefits have reached both the participating and non-participating groups, others reached only the participants. In Qhayanas the rotation-fund was managed by the local organization and thus with the general increase in membership all farmers were able to benefit from it. Support for processing on the other hand increased in the participant group. In Yacuiba all farmers benefited from ease of input purchase but only participants perceived an increase in benefits related to technology and knowledge.

The evolution of organizational assets in Qhayanas and Yacuiba shows a reassertion of local cultural practices through an adaptation of intervention approaches. In Qhayanas the Ayllu as a form of organization has persisted, yet also evolved over time. Given its current political nature, the producer organization APROAQ emerged as a new organization parallel and to some degree complementary to the Ayllu. The emergence of APROAQ was an adaptation to the local cultural practices since it replicated this particular collectivist trait of indigenous organizations, thus becoming a unifying organization. In Yacuiba on the other hand, organizations are accidental. Individualist traits persisted and aggregation in organizations took place through incentives and benefits continuing only through the duration of benefits.

Social practices of solidarity and reciprocity have also undergone changes in both study sites. While the introduction of market concepts and principles has been a contributing factor to the general reduction of solidarity, it has also had an effect on reciprocity of relations. In Qhayanas participating farmers experienced a polarization of reciprocity relations, with imbalances where some farmers received more and others gave more. Non-participating farmers on the other hand have experienced the opposite with reciprocal relations moving towards more balanced levels where farmers tend to give as much support as they receive. These changes are rooted in the rupture of the Andean Worldview of equality and redistribution and questioning of the validity of the reciprocity obligations in the traditional social stratification. *Canturunas* and *agregados* who own less land were expected to provide more support in the form of labour to *originarios* (See section 6.2.4.2). These obligations of the traditional social stratification were questioned producing a more balanced perception of reciprocity.

The introduction of market concepts and individualistic principles opposing equitable redistribution caused distrust and envy from non-participants to participants, thus the generalized reduction in solidarity and reciprocity. In Yacuiba a similar situation occurred but without the polarization. Participants experienced a general decrease in their experience of

reciprocity and a flow toward more balanced levels of reciprocity in the non-participating group.

These changes in “Power with” are also reflected in the reduction of willingness to mobilize and lead initiatives of collective action in agricultural and market issues in general and with particular emphasis in Qhayanas, while in Yacuiba some of the participating farmers have actually experienced a degree of increase in the willingness to mobilize and lead collective action for agriculture.

From the experience in both Qhayanas and Yacuiba we can conclude that “Power with” observed through asset base components of agency at the collective level experiences positive and negative changes that are affected and to some degree determined by tendencies of local culture and context. This is illustrated by the differential way in which farmers from Qhayanas and Yacuiba have reacted to affiliation within a new local organization. Nevertheless, the opposite is also true although in a lesser magnitude. Local culture and context is affected by interventions that aim at promoting changes in organizational assets. This can be observed in the same phenomenon of organizational affiliation in Qhayanas where collectivism was persistent through the massive affiliation, but where a shift towards a more individualistic and market oriented organization was also permeating local culture.

The Qhayanas tradition of organization as a means of collaboration that enables them to counteract the adverse environmental conditions, affected the way in which concepts are adopted and introduced to local practices. In the light of the reduced actions of the Ayllu in addressing production and marketing issues, APROAQ has emerged and has grown in affiliation and importance. Nevertheless, the introduction of specific technological practices and market principles have reduced solidarity among farmers and their willingness to mobilize initiatives of collective action in agriculture and markets, while at the same time disturbing the relations of reciprocity in the community.

In Yacuiba the innovation project intervention and the application of the participatory methods has had different outcomes in comparison to Qhayanas. After the project conclusion the general membership status decreased and although there was an increase in the membership in groups related to PROINPA (the service provider), most farmers changed from one organization or group to other according to their possibilities of accessing benefits. Solidarity has been reduced just as the willingness to mobilize initiatives of collective action for both agriculture and market. Nevertheless, it is important to highlight that despite the fact

that the feedback experiences were not positive during the practice of collective action exercised by the participant group in relation to agricultural issues raised with the Departmental Government, there was a small increase in the willingness to mobilize in the participating group.

Changes registered during and after the implementation of the innovation project and the participatory method were a result of the interaction of the intervention and the historic and cultural context where the project operated. In societies with visible collectivistic traits such as the one in Qhayanas, an intervention that fosters "Power-with" is more likely to produce observable changes in variables of agency at the collective level. In more individualistic societies, working to enhance "Power-with" will have less chance of producing observable and sustainable changes. Nevertheless, despite the possibility of producing observable changes in variables of agency at the collective level, the sense of empowerment is not positively affected. The changes observed are not radical differences from the predominant cultural, contextual and historic trends, but are only variations that follow similar patterns and that in due course have no positive effect on the sense of empowerment. With new, stronger or better articulated groups or associations, in a restrictive environment with lack of spaces to exercise meaningful decision making, the sense of "need" will inevitably become stronger.

7.2.2.3 Components of Structure – Power Over

Local organizational assets, as present day components of structure were analysed for this study and include: leadership, formality and relations between organizations. Changes in these variables have been influenced by the implementation of the SEP participatory method, yet the nature of the variations between study sites were determined by historic and cultural trends.

When local structures are analysed the most evident changes have taken place in the highlands of Qhayanas where structures are easily discernible in the form of organizations and culturally rooted practices. The main form of leadership election has changed from different forms of collective agreement to open elections, and the style of leadership and decision making to an inclusive practice of collective discussion and decision making. These changes were introduced by the project and promoted on APROAQ. With the eventual adoption of APROAQ as the main organization to address agriculture and market issues these forms of leadership election and decision making were also institutionalized. In Yacuiba on the other hand the shift towards a larger group of organizations in 2011 also diversified the system of

electing leaders and of exercising leadership to adjust to the requirements of the organization at turn.

The consolidation and legalization of structures was also stronger in Qhayanas where all communities and families were aggregated to form part of the Ayllu. In 2011 there was an increased perception of the organization's formal status.

Changes in components of structure evaluated through survey questionnaires focused on local level structures represented by community organizations, their relations and leadership practices. Results from the study on variables of structure at the local level lead us to conclude that participation through SEP can influence local level structures but this influence will be restricted, enhanced or adapted by historic trends, cultural patterns and national frameworks that determine higher level structures.

7.2.3 How do culture and history affect the outcomes of participatory processes on empowerment within the agricultural technology innovation sector, in two contrasting sites of Bolivia?

Cultural practices stem from environmental and natural factors that drive behaviours (human agency) that seek to ensure the survival and reproduction of a social group. The long term exercise of cultural practices in turn creates structures. When cultural practices and structures fail to meet the condition of "ensuring the survival and reproduction of the social group" they are challenged by human agency, and conflict emerges. This is exemplified in the study through different historic and cultural processes in Qhayanas and Chaco, where trends persist and are only altered through conflict, either violent or non-violent. Furthermore, these historic and cultural processes influence current interventions and processes and are in turn affected by them when the outcome is likely to influence the survival and reproduction of the social group.

This can be observed in the Qhayanas case where the first settlers developed a system of vertical control, in which through family clans they controlled different ecological levels for agricultural production, thus ensuring survival and reproduction of their social groups. The rupture of this vertical control system brought about after colonization and which collapsed during the republican period has damaged the social group's capacity to ensure survival and reproduction. This is accountable for the recurring conflict in highland areas and the different strategies sought to overturn deficiencies (migration, mining, revolutions, car smuggling, etc.).

In the Chaco region, the culture of the Guaraní evolved in adaptation to the dryness of the land through practices of fishing, hunting and itinerant farming. The pressure of Inca colonization produced intense conflict and war for the control of their land. After colonization this pressure decreased considerably since the new colonizing group (Spanish) were busy extracting tributes from the highlands and valleys. The new colonizing movement during the republican period severely affected the survival and reproduction of the local Guaraní and Mataco dwellers causing violent confrontation between the colonizing groups and the locals. In Yacuiba most of the Mataco and Guaraní were pushed away and the newly established communities have a diversity of backgrounds ranging from Aymara and Quechua to European, including a wide diversity of mixed backgrounds. These newly formed communities are still in continuous conflict seeking to ensure survival and reproduction of their social groups.

7.2.3.1 Historic patterns and their influence

Organizations for agriculture have followed different patterns in Qhayanas and Yacuiba. In Qhayanas the harsh environmental conditions have promoted the establishment of strong community organizations based on kinship relations, cohesion and cooperation. With the persistence of the limiting environmental conditions, and without other options to manage them, the cohesion and strength of the community organizations have persisted since pre-Hispanic times, through the colonial and republican periods. This trait was evident during the implementation of the innovation project and the SEP participatory method, and has determined the nature of the changes and the way in which communities have internalized the new approaches.

In Yacuiba on the other hand the first dwellers were organized into loosely bound communities valuing independence and self-autonomy over all. These principles were fostered over time and in several occasions defended through violent conflict. Although through violence newcomers managed to establish principles of state and colonization, some individualistic traits persisted and were promoted by entry into the market economy. The data presented in this study shows that changes promoted by the project intervention and the SEP participatory method, have fallen within the historic patterns of loosely bound organizations, showing aggregation and disaggregation dynamics based on individual interests and benefits perceived.

Decision making processes for agricultural production have followed organizational patterns in each study site. Decisions were concentrated in the organizations in Qhayanas, and were

attributes of individual families in Yacuiba. This pattern is a reiteration of historic social trends of collectivism in Qhayanas and individualism in Yacuiba.

The attempt to introduce changes in decision making through the participatory method has produced social conflict. During the interventions conflict manifested through problems of envy and distrust from the community to participating farmers in Qhayanas, and negotiation problems with the regional Departmental Government in Yacuiba. These manifestations of conflict were in essence a dispute over power that has been present throughout history for the control of decision making in agriculture (See Table 4.3 and Table 4.8). Struggle over power expressed through decision making has, over time, produced violent confrontation in both regions. The introduction of the participatory method in this case has performed as a non-violent contestation tool that allows farmers a chance to negotiate decision making.

Productive patterns, technology and innovation follow a historic trend similar to that of decision making and organizations for agricultural production; being in turn all related to cultural manifestations of individualism and collectivism persistent over time.

7.2.3.2 Cultural patterns and their influence

Cultural patterns influence the outcome of historic events. Yet in the same line, cultural patterns are also influenced by those events and their outcomes. The study shows that cultural patterns have influenced the outcomes of the implementation of the SEP participatory method in both Qhayanas and Yacuiba. Cultural traits of collectivism in Qhayanas have slanted outcomes towards changes in organizational assets (power-with). On the other hand, cultural traits of individualism in Yacuiba have determined little influence on organizational assets (power-with) and a focus on psychological assets (power from-within). On the other hand, the implementation of the project has also influenced cultural patterns in return. In Qhayanas, elements of individualism permeated local culture and farmers contested uneven reciprocity relations (See section 6.2.4.2) strongly rooted in local culture. In Yacuiba elements of collectivism have also breached local culture as participating farmers reported an increase in the possibility of mobilization (See Figure 6.43) and leadership (See Figure 6.44) for collective action in the market, through the community social organization.

Looking back at the analysis of the different variables for the three research questions presented in this study, it can be concluded that it is neither what people learn nor the development of their capabilities, nor is it how they are organized, nor the small changes in

local structures that ultimately influence the perception of empowerment. It is essentially a shift in higher level structures that needs to be made in order to increase the sense of empowerment. Interventions that foster agency and structure at local level do little to address more fundamental social, economic and political structures that ultimately restrict meaningful participation and involvement in decision making. Yet there is still hope for empowerment if these interventions are creating a "need", for this can be the seed of conflict observed throughout historical processes that can bring about more meaningful changes.

7.3 Methodological reflections and limitations

This research addressed knowledge creation through an objectivist epistemology where empowerment is objectified by the farmers participating in the study. At same time it grounded its logic and criteria on the "Post positivist" perspective, focusing mainly on the personal perception of farmers, influenced by different factors. It evaluated the 'sense' of empowerment perceived by farmers and their perception in relation to different asset based components within a particular context. This study took empowerment to mean the ability to take control over one's own life through effective choice making and its outcomes. Choice making is influenced by individual perceptions, thus the strong focus on perceptions embedded in this study.

Results showed that there were differences between some actual situations and the perceptions of farmers. For example: In Yacuiba it was a fact that the local organization was formally established since this legal framework was the basis for the negotiation and later approval of project funding from the Departmental Government. Nevertheless, some farmers perceived that the organization was not formally established, thus reflecting unfamiliarity with the organization and its legal framework. Likewise, in Qhayanas some farmers perceived that there were no spaces for the exercise of participation in local and regional governments. In reality, the Popular Participation Law enacted in 1994 created these spaces in every municipal Government through local vigilance committees. These examples show us that there are differences between what farmers perceive and the reality of situations and frameworks, but it also shows us the reality in which those farmers live. In this situation a "constructivist" epistemology and an interpretivist approach would have provided a more in-depth analysis of how farmers perceived, constructed and gave meaning to events, and conditions.

The mixed-method approach sought to enhance validity and reduce attribution bias in the research. This approach was considered due to the complex nature of empowerment processes and the difficulties to capture this perception in a survey. This approach was helpful to understand and visualize the general cultural and historic context. Nevertheless, there are some specific issues that need to be re-considered if the research were to be replicated.

In the first instance it is important to mention that the survey questionnaire was extremely long and had variables which were not analysed. The survey was part of Cambio Andino's broader research framework and was intended to address issues of social capital and empowerment. This is one of the reasons why asset-based components were considered to evaluate empowerment. Nevertheless, not all asset-based components were useful for this evaluation. The study showed that the best indicators of empowerment are **psychological assets** and to some degree **social assets**.

Information assets depicted in the study through elements of access to communication and transportation were not affected by the project intervention but were strongly affected by external factors. National policies such as the promotion of rural communication through the nationalization of ENTEL and the establishment of better services and infrastructure in rural areas are major factors influencing access to communication. Other social conflicts such as the one with smuggled cars in Potosí and increased demand for transport in Yacuiba also affected the perception of access to transportation.

Components of **material assets** were affected mainly by external contextual factors and in some cases were influenced by the innovation project, but not directly by the participatory method implemented. Reports *on land tenure size, system and possession of irrigation* were essentially affected by historic trends of conflict over land and the emerging policies of land redistribution.

Financial assets were influenced by external contextual factors and partially by the project intervention. Income levels decreased in both Qhayanas and Yacuiba mainly due to the increase in the national minimum salary that affected formal labourers but not agricultural related labour. With a higher minimum salary farmers had a less favoured position, where income depended on their own productive capacity and was not subject to the minimum standards.

On the other hand, analysis of the context, history and culture was important to clarify the attribution of the above-mentioned variables, yet it could have been enhanced through a more systematic analysis of the economic, political and social processes. This political economy analysis would have strengthened the "needs" theory through a deeper understanding of the institutional and governance arrangements as obstacles to empowerment.

7.4 Areas for further research

It is important to highlight the fact that this research focused on SEP as a specific participatory method, analysing how it relates to empowerment in different historic and cultural backgrounds. The principles and operational mechanisms of a specific participatory method are determinant factors in the expected empowerment outcomes. Therefore, the different methods should be analysed separately to understand their potential contribution to empowerment as well as their strengths and limitations in different contexts.

Development models today seek to enhance participation without providing clear means to the exercise of that participation and its possible empowerment outcomes. Although participatory processes can have instrumental effects in terms of supporting ownership and adequate implementation of projects, they can also enhance psychological assets and the sense of empowerment. In such cases, donors and development practitioners need to be prepared for the possibility of being questioned by "intended beneficiaries", and for the possibility of having to change their plans and projects. This was the case in Yacuiba, where farmers began to question the intervention, the equipment delivered and the process as a whole. In this case, the public donor (Departmental Government) was not able to respond to local demands, thus creating a negative effect where farmers felt less empowered, discontent and frustrated.

This analysis leads us to some questions such as: What are the specific factors that produce and re-produce structures that restrict empowerment? What is the nature of power and where is it concentrated? Whose interests are embedded in policies to promote participation and empowerment? What do those interests reveal on a deeper analysis of the organizational cultures of the different actors involved? Answers to these questions need a systematic political economy analysis that fosters a dialogue about power and the effectiveness of development interventions.

Finally, it is necessary to reiterate the importance of understanding the past and its influence on the present as the basis for the design of research and development interventions , through a quote of Paulo Freire who wrote: *"…looking at the past must only be a means of understanding more clearly what and who they are so that they can more wisely build the future." (Freire and Mellado, 2005)*

BIBLIOGRAPHY

AKRAM, S. 2010. *Re-Conceptualising the concept of agency in the structure and agency dialectic: habitus and the unconscious.* Doctor of Philosophy, University of Birmingham.

ALBÓ, X. 1988. *Raíces de América : el mundo Aymara,* Madrid, Alianza Editorial.

ALBÓ, X. 1989. *Para comprender las culturas rurales en Bolivia,* La Paz, MEC/CIPCA/UNICEF.

ALBÓ, X. 2008. *Movimientos y poder indígena en Bolivia, Ecuador y Perú,* La Paz, CIPCA.

ALEXANDER, J. C. 1995. *Fin de siècle social theory : relativism, reduction, and the problem of reason,* London; New York, Verso.

ALSOP, R., BERTELSEN, M. F. & HOLLAND, J. 2006. *Empowerment in practice : from analysis to implementation,* Washington, DC, World Bank.

ALSOP, R., HEINSOHN, N. & SOMMA, A. 2005. Measuring Empowerment: An Analytic Framework. *In:* ALSOP, R. (ed.) *Power, rights and poverty concepts and connections.* Washington, DC: World Bank.

ALVAREZ, S., DOUTHWAITE, B., THIELE, G., MACKAY, R., CÓRDOBA, D. & TEHELEN, K. 2010. Participatory Impact Pathways Analysis: a practical method for project planning and evaluation. *Development in Practice,* 20**,** 946-958.

ANAND, S., SEN, A. & UNITED NATIONS DEVELOPMENT PROGRAMME. OFFICE OF DEVELOPMENT STUDIES. 1996. *Sustainable human development : concepts and priorities,* New York, Office of Development Studies, United Nations Development Programme.

ANDERSEN, H. 2009. *The Causal Structure of Conscious Agency.* Doctor of Philosophy, University of Pittsburgh.

ARCHER, M. S. 1982. Morphogenesis versus Structuration: On Combining Structure and Action. *The British Journal of Sociology,* 33**,** 455-483.

ARCHER, M. S. 2005. Structure, Culture and Agency. *In:* JACOBS, M. D., HANRAHAN, N. W. & BLACKWELL PUBLISHING, L. (eds.) *The Blackwell companion to the sociology of culture.* Malden, MA: Blackwell Pub.

ARIAS, O. S. & BENDINI, M. 2006. Bolivia Poverty Assessment: Establishing the Basis for Pro Poor Growth. *En Brave* [Online], 89. Available: http://siteresources.worldbank.org/INTENBREVE/Newsletters/20943040/89-MAY06-BoliviaPA.pdf.

ARNSTEIN, S. R. 1969. A Ladder Of Citizen Participation. *Journal of the American Institute of Planners,* 35.

ASHBY, J. A. & SPERLING, L. 1995. Institutionalizing Participatory, Client-Driven Research and Technology Development in Agriculture. *Development and Change,* 26**,** 753-770.

ASHBY, J. A. B., A. R.; GARCIA, T.; GUERRERO, M. D. P.; HERNANDEZ, L. A.; QUIRÓS, C. A., ROA, J. I. 2000. *Investing in Farmers as Researchers: Expereince with Local Agricultural Research Commitees in Latin America,* Cali, CIAT.

ASSOCIATION OF CIALS OF HONDURAS & CLASSEN, L. 2008. *In:* FORTMANN, L. (ed.) *Participatory Research in Conservation and Rural Livelihoods. Doing Science Together.* Oxford: Wiley-Blackwell.

AYMA ROJAS, D. 2011. La Radio en Bolivia. *La Patria*, January 16, 2011.

BACHRACH, P. & BARATZ, M. S. 1962. Two Faces of Power. *The American Political Science Review,* 56**,** 947-952.

BAERT, P. & SILVA, F. C. D. 2010. *Social theory in the twentieth century and beyond,* Cambridge [u.a.], Polity.

BAMBERGER, M. 2012. Introduction to Mixed Methods in Impact Evaluation. *Impact Evaluation Notes* [Online], 3.

BANDURA, A. 2000. Exercise of Human Agency Through Collective Efficacy. *Current directions in psychological science,* 9**,** 75-78.

BARDA, J. C. 1997. Building Support for Market Reforms in Bolivia: The Capitalization and Popular Participation Programs. *The Deepening of Market Based Reform: Bolivia's Capitalization Program* [Online].

BARJA, G. & URQUIOLA, M. 2003. Capitalization, regulation and the poor: access to basic services in Bolivia. *In:* UGAZ, C. & WADDAMS PRICE, C. (eds.) *Utility, Privatization and Regulation. A Fair Deal for Consumers?* Cheltenham, UK: Edward Elgar Publishing, Inc.

BARNES, B. 2000. *Understanding agency : social theory and responsible action,* London; Thousand Oaks, Calif., Sage.

BARNET, T., THIELE, G. & ZSCHOCKE, T. 2006. *Participatory Market Chain Approach (PMCA) - User Guide,* Lima, Peru, International Potato Center (CIP).

BARTLETT, A. 2008. No More Adoption Rates! Looking for Empowerment in Agricultural Development Programmes. *Development in Practice,* 18**,** 524-238.

BAZOBERRY CHALI, O. 2003. 50 años de la Reforma Agraria en el Chaco Boliviano. *In:* VARGAS VEGA, J. D. (ed.) *Proceso Agrario en Bolivia.* La Paz: Plural Editores.

BEBBINGTON, A. 2004. Theorizing participation and institutional change: ethnography and political economy. *In:* HICKEY, S. & MOHAN, G. (eds.) *Participation: from tyranny to transformation? Exploring new approaches to participation in development.* London: Zed.

BEBBINGTON, A., LEWIS, D., BATTERBURY, S., OLSON, E. & SIDDIQI, M. S. 2007. Of Texts and Practices: Empowerment and Organisational Cultures in World Bank-Funded Rural Development Programmes. *Journal of Development Studies,* 43**,** 597-621.

BEBBINGTON, A. J., BEBBINGTON, D. H. & VALENCIA, L. H. 2009. Extraction, inequalities and territories in Bolivia. *Congress of the Latin American Studies Association.* Rio de Janeiro, Brazil.

BELTRÁN CONDORI, F. 2002. Gobierno de la comunidad de Lapa Lapa del Jatun Ayllu Yura Bolivia. *In:* RESTREPO, R. A. (ed.) *Poder y Comprensiòn. América se repiensa desde sus orígenes.* Quito: UNESCO - Siglo del Hombre Editores.

BELLON, M. R. 2001. *Participatory Research Methods for Technology Evaluation: A Manual for Scientists Working with Farmers,* Mexico, D.F., CIMMYT.

BENTLEY, J. W. 1994. Facts, Fantasies, And Failures Of Farmer Participatory Research. *Agriculture and Human Values,* 11**,** 140-150.

BERNET, T., DEVAUX, A., ORTIZ, O. & THIELE, G. 2011. The Participatory Market Chain Approach. *In:* DEVAUX, A., ORDINOLA, M. & HORTON, D. (eds.) *Innovation for Development: The Papa Andina Experience.* Lima, Peru: International Potato Center.

BLOOM, P. & KEIL, F. C. 2001. Thinking Through Language. *Mind and Language,* 16**,** 17.

BOGENSCHNEIDER, K. & CORBETT, T. J. 2011. *Evidence-Based Policymaking: Insights from Policy-Minded Researchers and Research-Minded Policymakers,* Sussex, Taylor and Francis.

BOHAN, M. 1942. *Informe de la Misión Económica de los EE.UU. a Bolivia,* La Paz, Editorial Carmach, Traducido al Castellano 1988.

BOJANIC, A. 2001. Extension, Poverty and Vulnerability in Bolivia and Colombia. Country Studies for the Neuchatel Inititative. *London Overseas Development Institute*.

BOTELLO, R. 2005. *RE: Experiencia en la evaluación de medio término en el Municipio de Cabezas.* Type to POLAR, V.

BOTELLO, R., C., V., RODRIGUEZ, F., GANDARILLAS, E., FERNANDEZ, J. & POLAR, V. 2005. *Profundizaciòn de Demandas para la Elaboraciòn de Propuestas de Proyectos de Innnovación Tecnológica,* Cochabamba, Innova - FoCam.

BOULDING, K. E. 1989. *Three faces of power,* Newbury Park, Calif., Sage Publications.

BOURDIEU, P. & WACQUANT, L. J. D. 1992. *An invitation to reflexive sociology,* Chicago, University of Chicago Press.

BOUYSSE-CASSAGNE, T. 1978. L'espace aymara: urco et uma. *Annales. Histoire, Sciences Sociales,* 33**,** 1057-1080.

BROWMAN, D. L. 1997. Political Institutional Factors Contributing to the Integration of the Tiwanaku State. *In:* MANZANILLA, L. (ed.) *Emergence and Change in Early Urban Societies.* New York: Plenum Press.

BRÜCHER, H. 1987. The Isthmus of Panama as a Crossroad for Prehistoric Migration of Domesticated Plants. *GeoJournal,* 14**,** 2.

BRUHNS, K. O. 1994. *Ancient Sout America,* New York, Cambridge University Press.

BRYANT, C. G. A. 1992. Sociology without Philosophy? The Case of Giddens's Structuration Theory. *Sociological Theory,* 10**,** 137-149.

BRYMAN, A. 2012. *Social Research Methods,* London, Oxford University Press.

BUECHLER, H. C. & BUECHLER, J.-M. 1971. *The Bolivian Aymara,* New York, Holt, Rinehart and Winston.

CAMFIELD, L. & DUVENDACK, M. 2014. Impact Evaluation - Are We 'Off the Gold Standard'. *European Journal of Development Research,* 26**,** 1-11.

CARDOZO, A. 1971. La Planificación de la Investigación Agrícola en Bolivia. *In:* IICA (ed.) *Seminario sobre la administración de instituciones de investigación agrícola.* Quito, Ecuador: Instituto Interamericano de Ciencias Agrícolas de la OEA, Dirección Regional para la Zona Andina.

CIDOB. 2007. *La Confederación de Pueblos Indígenas de Bolivia CIDOB* [Online]. La Paz: CIDOB. Available: http://www.cidob-bo.org/index.php?option=com_content&task=view&id=12&Itemid=41 [Accessed February 19, 2012 2012].

CLAUSEN, J. S. 1991. Adolescent Competence and the Shaping of the Life Course. *American Journal of Sociology,* 96**,** 805-842.

CLEAVER, F. 1999. Paradoxes of Participation: Questioning Participatory Approaches to Development. *Journal of International Development,* 11**,** 597-612.

CLEAVER, F. 2001. Institutions, Agency and the Limitations of Participatory Approaches to Development. *In:* COOKE, B. & KOTHARI, U. (eds.) *Participation: The new tyranny?* London: Zed Books.

CLEAVER, F. 2004. The social embeddedness of agency and decision making. *In:* HICKEY, S. & MOHAN, G. (eds.) *Participation, from tyranny to transformation? : exploring new approaches to participation in development.* London; New York; New York: ZED Books ; Distributed exclusively in the U.S. by Palgrave Macmillan.

CLEGG, S. 1989. *Frameworks of power,* London, Sage.

CODEPO 2004. Estudio de la migración interna en Bolivia. . *In:* MINISTERIO DE DESARROLLO SOSTENIBLE - VICEMINISTERIO DE PLANIFICACIÓN (ed.). La Paz: Secretaría Técnica del Consejo de Población para el Desarrollo Sostenible.

COLEMAN, M. D. 2011. Emotion and the Self-Serving Bias. *Current Psychology,* 30**,** 345-354.

COMBES, I. 1991. El "Testamento" Chiriguano: Una política desconocida del post 1892. *Bull. Inst. Fr. études andines,* 20**,** 237-251237.

COMBES, I. 2005. Las batallas de Kuruyuki. Variaciones sobre una derrota chiriguana. *Bulletin de l'Institut Francais d'Études Andines,* 34**,** 221-233.

COOK, N. D. 2004. *Demographic Collapse. Indian Peru, 1520 - 1620,* Cambridge, UK, Press Syndicate of the University of Cambridge.
COOKE, B. K. U. 2001. The Case for Participation as Tyranny. *In:* COOKE, B. K. U. (ed.) *Participation : the new tyranny?* London; New York: Zed Books.
COPESTAKE, J. & WILLIAMS, R. 2014. Political-Economy Analysis, Aid Effectveness and the Art of Development Management. *Development Policy Review,* 32**,** 133-154.
CORNWALL, A. & BROCK, K. 2005. What do buzzwords do for development policy? a critical look at 'participation', 'empowerment' and 'poverty reduction'. *Third World Quarterly,* 26**,** 1043-1060.
CORTÉZ, O. M. 2003. *La lucha por la tierra en el Gran Chaco tarijeño*, Fundacion Pieb.
COUNTRY REPORT: BOLIVIA 2007. Country Report. Bolivia. *Business Source Premier***,** 1-6.
CROTTY, M. 1998. *The foundations of social research : meaning and perspective in the research process,* London; Thousand Oaks, Calif., Sage Publications.
CRUZ V., R. December 2010 2010. *RE: Technical Staff Interview.* Type to POLAR, V.
CHAMBERS, R. 1983. *Rural development : putting the last first,* London, Longman.
CHAMBERS, R. 1984. *Rural development : putting the last first,* London; New York, Longman.
CHAMBERS, R. 1994. Foreword to "Beyond farmer first". *In:* SCOONES, I., THOMPSON, J. & INTERMEDIATE TECHNOLOGY DEVELOPMENT GROUP (eds.) *Beyond farmer first : rural people's knowledge, agricultural research and extension practice.* London: Intermediate Technology.
CHAMBERS, R. 2008. *Revolutions in Development Inquiry,* London, Earthscan.
CHAMBERS, R., CONWAY, GORDON 1992. Sustainable rural livelihoods: practical concepts for the 21st century. *In:* IDS (ed.) *Discussion Papers.* Sussex: Institute of Development Studies, University of Sussex.
CHAMBERS, R. P. A. T. L. A. 1989. *Farmer first : farmer innovation and agricultural research,* London, Intermediate Technology Publications.
CHÁVEZ, F. January 2012 2012. *RE: Cobertura y alcances del INIAF.* Type to POLAR, V.
CHONCHOL, J. 2003. La Reforma Agraria en America Latina. *In:* VARGAS VEGA, J. D. (ed.) *Proceso Agrario en Bolivia.* Santiago de Chile: Plural Editores.
CHOQUE CAPUMA, E. 2004. *Las prácticas de poder y liderazgo de los Jilaqatas y Mama tállas en Huachacalla Marka.* MSc en Educación Intercultural y Bilingüe, Gestión y Planificación, Universidad Mayor de San Simón.
D'ANDRADE, R. G. 1995. *The development of cognitive anthropology,* Cambridge, Cambridge University Press.
DAHL, R. A. 1961. *Who governs? : democracy and power in an American city,* New Haven, Conn ; London, Yale University Press.
DE MESA, J., GISBERT, T., MESA GISBERT, C. D. 1999. *Historia de Bolivia,* La Paz, Gisbert y CIA S.A.
DEL CAMPANA, D. 1982. The woman who descended from the sky. *In:* WILBERT, J. & SIMONEAU, K. (eds.) *Folk literature of the Mataco indians.* Los Angeles: University of California.
DEL POPOLO, F., OYARCE, A. M., CEPAL & CELADE 2006. Población Indígena de América Latina: Perfil Sociodemográfico en el Marco de la Conferencia Internacional sobre la Población y el Desarrollo y de las Metas del Milenio. *In:* CEPAL (ed.) *Pueblos indígenas y afrodescendientes de América Latina y el Caribe: información sociodemográfica para políticas y programas.* Santiago de Chile: United Nations.
DEVAUX, A., HORTON, D., VELASCO, C., THIELE, G., LÓPEZ, G., BERNET, T., REINOSO, I. & ORDINOLA, M. 2009. Collective action for market chain innovation in the Andes. *Food Policy,* 34**,** 31-38.

DITTMAR, M. 1996. Los Yamra prehispánicos y actuales: etnogénesis, mirodiferenciación y su relación con la población tiwanaku de América del Sur. *Revista Española de Antropología Americana,* 26**,** 18.

DOUTHWAITE, B., ALVAREZ, S., COOK, S., DAVIES, R., GEORGE, P., HOWELL, J., MACKAY, R. & RUBIANO, J. 2007. Participatory impact pathways analysis: a practical application of program theory in research-for-development. *Canadian Journal of Program Evaluation / Revue canadienne d'évaluation de programme,* 22**,** 127-159.

DURKHEIM, E., 1858-1917 1938. *The rules of sociological method,* Chicago, Free press of Glencoe.

DUTTA, M. J. 2011. *Communicating social change: structure, culture and agency,* New York, Routledge.

EL DIARIO 2010. Policías fueron victimados por comunarios en norte de Potosí. *El Diario.* 26, May, 2010 ed.: El Diario.

ELDER-VASS, D. 2010. *The causal power of social structures : emergence, structure and agency,* Cambridge; New York, Cambridge University Press.

ELDER-VASS, D. J. 2006. *The teory of emergence, social structure, and human agency.* Doctor of Philosophy, Birkbeck College.

ERBOL, A. D. N. 2011a. INRA revela reversión de tierras ociosoas a dos Senadores masistas. *Jornada*.

ERBOL, L. P. 2011b. Legalización de "chutos" es pago por liberar tres rehenes en Llallagua. *El Potosí*, May 31st, 2011, p.1.

ERICKSON, C. L. 1988. Raised Field Agriculture in the Lake Titicaca Basin. Putting Ancient Agriculture Back to Work. Expedition. *In:* MOHR CHAVEZ, K. (ed.) *Andean Archeology.* Philadelphia: The University Museum, University of Pennsylvania.

ESCOBARI DE QUEREJAZU, L. 2011. Mano de obra especializada en los mercados coloniales de Charcas. Bolivia, siglos XVI-XVII. *Nuevo Mundo Mundos Nuevos.* January 31, 2011 ed.: Debates.

ESTRELLA, M., BLAUERT, J., CAMPILAN, D., GAVENTA, J., GONSALVES, J., GUIJT, I., JOHNSON, D. & RICAFORT, R. 2000. *Learning from change: Issues and experiences in participatory monitoring and evaluation* [Online]. London, UK: Intermediate Technology Publications ; International Development Research Centre. Available: http://site.ebrary.com/id/10173307 [Accessed].

ESTRELLA, M. & GAVENTA, J. 1998. Who counts reality? Participatory Monitoring and Evaluation a Literature Review. *IDS Working Paper* [Online], 70.

EYBEN, R. 2005. Linking Power and Poverty Reduction. *In:* ALSOP, R. (ed.) *Power, Rights, and Poverty: Concepts and Connections.* Washington DC: The International Bank for Reconstruction and Development / The World Bank.

EYBEN, R. & NAPIER-MOORE, R. 2009. Choosing Words with Care? Shifting meanings of women's empowerment in international development. *Third World Quarterly,* 30**,** 285 - 300.

EYBURN, R. & LADBURY, S. 1995. Popular participation in aid assisted projects: why more in theory than in practice? *In:* NELSON, N. & WRIGHT, S. (eds.) *Power and participatory development : theory and practice.* London: ITDG Pub.

FABRICANT, N. & HICKS, K. 2013. Bolivia's Next Water War. *Radical History Review,* Spring 2013**,** 16.

FALS-BORDA, O. 1981. La ciencia y el pueblo. *In:* GROSSI, F. V., GIANOTTEN, V. & WIT, T. D. (eds.) *Inviestigación participativa y praxis rural: nuevos conceptos en educación y desarrollo comunal.* Lima: Mosca Azul Editores.

FARRINGTON, J. & MARTIN, A. M. 1988. Farmer participatory research: A review of concepts and recent fieldwork. *Agricultural Administration and Extension,* 29**,** 247-264.

FAY, B. 1996. *Contemporary philosophy of social science : a multicultural approach,* Oxford, UK; Cambridge, Mass, Blackwell.

FEAST, L. & MELLES, G. 2010. Epistemological Positions in Desighn Research: A Brief Review of the Literature. *2nd International Conference on Design Education, 28 June - 1 July 2010.* Sydney, Australia: University of New South Wales.

FERNANDEZ, B., ERMELINDA 2003. La Reforma Agraria en Bolivia y el MST. *In:* VARGAS VEGA, J. D. (ed.) *Proceso agrario en Bolivia y America Latina.* La Paz: Plural Editores.

FERNANDEZ, J., POLAR, V., FUENTES, W., ASHBY, J., VILLARROEL, T. & PAZ, R. 2011a. Mejorando la calidad de vida de los productores de maíz y maní en el chaco boliviano. *In:* THIELE, G., QUIROS, C. A., ASHBY, J., HAREAU, G., ROTONDO, E., LOPEZ, G., PAZ YBARNEGARAY, R., OROS, R., ARÉVALO, D. & BENTLEY, J. W. (eds.) *Métodos participativos para la inclusión de los pequeños productores rurales en la innovación agropecuaria. Experiencias y alcances en la región andina 2007-2010.* Lima: Programa Alianza Cambio Andino.

FERNANDEZ, J., POLAR, V., QUIROS, C. A. & ASHBY, J. 2011b. Descripción del método SEP. *In:* THIELE, G., QUIROS, C. A., ASHBY, J., HAREAU, G., ROTONDO, E., LOPEZ, G., PAZ YBARNEGARAY, R., OROS, R., ARÉVALO, D. & BENTLEY, J. W. (eds.) *Métodos participativos para la inclusión de los pequeños productores rurales en la innovación agropecuaria: Experiencias y alcances en la región andina 2007-2010.* Lima: Programa Alianza Cambio Andino.

FERREIRA, F. H. G., WALTON, M., ROSS-LARSON, B. C. & WORLD BANK. 2005. *Equity and development,* New York ; Oxford; Washington, D.C., Oxford University Press / World Bank.

FOCK, N. 1982. How women came down from the sky. *In:* WILBERT, J., SIMONEAU, K. & DEL CAMPANA, D. (eds.) *Folk literature of the Mataco Indians.* Los Angeles, California: UCLA Latin American Center Publications, University of California.

FOLLETT, M. P. 1941. Power. *In:* METCALF, H. C. & URWICK, L. F. (eds.) *Dynamic administration : the collected papers of Mary Parker Follett.* London: Pitman.

FOUCAULT, M., FAUBION, J. D. & HURLEY, R. 2000. *Power,* New York, New Press; Distributed by W.W. Norton.

FRECE, A. D. & POOLE, N. 2008. Constructing livelihoods in rural Mexico milpa in Mayan culture. *Journal of peasant studies,* 35**,** 335-352.

FREIRE, P. 2009. *La educación con práctica de la libertad,* Mexico, Siglo XXI Editores S.A.

FREIRE, P. & MELLADO, J. 2005. *Pedagogía del oprimido,* México, D.F., Siglo XXI Editores.

FRIEDMAN - RUDOVSKY, J. 2008. Eight Years Later, the Bolivian Water War Continues. *Earth Island Journal,* 23**,** 4.

FRIEDMANN, J. 1992. *Empowerment : the politics of alternative development,* Cambridge, Mass. ; Oxford, Blackwell.

FUJISAKA, S. 1994. *Will Farmer Participatory Research Survive in the International Agricultural Research Centres?,* London, IIED.

GADE, D. W. 1992. Landscape, System , and Identity in the Post-Conquest Andes. *Annals of the Association of American Geographers,* 82**,** 460-477.

GALLOPPO, E. 2003. Resultados de los cambios introducidos por la Reforma Agraria. *In:* VARGAS VEGA, J. D. (ed.) *Proceso Agrario en Bolivia.* La Paz: Plural Editores.

GANDARILLAS, A., BLAJOS, J., AGUIRRE, G., DEVAUX, A. & THIELE, G. 2007. Changing Paradigms for Organising R&D: Agricultural Research and the Creation of the PROINPA Foundation in Bolivia. *International Journal of Agricultural Resources, Governance and Ecology,* 6**,** 256-276.

GANDARILLAS, E., FERNANDEZ, J., ALMANZA, J. & POLAR, V. 2005. El seguimiento y evaluación participativa en el contexto de los proyectos de innovación tecnológica aplicada. *In:*

ZAPATA, V., GANDARILLAS, E., HERNANDES, L. A., QUIROS, C. A., FERNANDEZ, J., POLAR, V. & ALMANZA, J. (eds.) *Metodologìas Participativas para la Innovación Tecnológica Agropecuaria.* Cochabamba: FoCam.

GANDARILLAS M., E. 2006. *Institutional Arrangements to Improve the Responsiveness of Agricultural Innovation Systems to the Needs of the Poor: An Investigation of Participatory Monitoring and Evaluation in Bolivia.* Doctor of Philosophy, University of London.

GANDARILLAS M., E. January 2011 2011. *RE: Interview on the future of the Chaco Regional Office.* Type to POLAR, V.

GASPER, D. 2004. Human Well-being: Concepts and Conceptualization. *In:* RESEARCH, W. I. F. D. E. (ed.) *Discussion Paper.* La Hague: United Nations University.

GAVENTA, J. 1980. *Power and powerlessness : quiescence and rebellion in an Appalachian Valley,* Oxford, Clarendon Press.

GAVENTA, J. 2006. Finding the Spaces for Change: A Power Analysis. *IDS Bulletin,* 37**,** 23-33.

GECAS, V. 2003. Self-Agency and the Life Course. *In:* MORTIMER, J. T. & SHANAHAN, M. J. (eds.) *Handbook of the life course.* New York: Kluwer Academic/Plenum Publishers.

GEERTZ, C. 1973. *The interpretation of cultures: selected essays,* New York, Basic Books.

GEILFUS, F. 2002. *80 Herramientas para el desarrollo participativo: Diagnóstico, Planificaciòn, Monitoreo y Evaluación,* San José C.R., IICA.

GIDDENS, A. 1984. *The constitution of society : outline of the theory of structuration,* Oxford, Polity.

GODOY, R., DE FRANCO, M., ECHEVERRIA, R. G. 1993. A Brief History of Agricultural Research in Bolivia: Potatoes, Maize, Soybeans and Weat Compared. *In:* HARVARD INSTITUTE FOR INTERNATIONAL DEVELOPMENT (ed.) *Development Discussion Papers.* Masachusets: Harvard University.

GOLDSTEIN, P. S. 2005. *Andean diaspora: the Tiwanaku colonies and the origins of South American empire,* Gainesville, Florida, Univiersity Press of Florida.

GOODMAN-ELGAR, M. 2008. Evaluating soil resilience in long-term cultivation: a study of pre-Columbian terraces from the Paca Valley, Peru. *Journal of Archaeological Science,* 35**,** 3072-3086.

GOSE, P. 1993. Segmentary State Formation and the Ritual Control of Water under the Incas. *Comparative Studies in Society and History,* 35**,** 480-514.

GOUGH, I., MCGREGOR, J. A. & CAMFIELD, L. 2007. Theorising wellbeing in international development. *In:* GOUGH, I. & MCGREGOR, J. A. (eds.) *Wellbeing in developing countries : from theory to research.* Cambridge; New York: Cambridge University Press.

GOVERNMENT OF BOLIVIA 1953. Ley de Reforma Agraria. *DL No. 3464 del 2 de Agosto de 1953.*

GOVERNMENT OF BOLIVIA 1994. Ley de Participación Popular. *In:* GOVERNMENT OF BOLIVIA (ed.) *1551.* Bolivia.

GOVERNMENT OF BOLIVIA 2001. Ley No. 2201, 18 de mayo de 2001. *In:* NACIONAL, H. C. (ed.) *2201.* La Paz: Gaceta Oficial

GOVERNMENT OF BOLIVIA 2006. Plan Nacional de Desarrollo: Bolivia soberana, productiva y democrática para Vivir Bien. *In:* MINISTERIO DE PLANIFICACION (ed.) June 2006 ed. La Paz: Gobierno de Bolivia.

GREENE, J. C., CARACELLI, V. J. & GRAHAM, W. F. 1989. Toward a Conceptual Framework for Mixed-Method Evaluation Designs. *Educational Evaluation and Policy Analysis,* 11**,** 255-274.

GRIFFIN, J. 1986. *Well-being : its meaning, measurement, and moral importance,* Oxford, Clarendon Press.

GRIX, J. 2004. *The foundations of research,* New York, Palgrave Macmillan.

GROOTAERT, C. & NARAYAN, D. 2001. Local Institutions, Poverty, and Household Welfare in Bolivia. *Policy Research Working Paper*, 66.
GUIJT, I. & CORNWALL, A. 1995. Critical Reflections on the Practice of PRA. *In:* CORNWALL, A. (ed.) *PLA Notes.* London: IIED.
GUIJT, I. & GAVENTA, J. 1998. Participatory monitoring and evaluation: learning from change. Institute of Development Studies [IDS], University of Sussex, Brighton BN1 9RE, UK; E-mail: ids@ids.ac.uk; Fax: +44 1273 691647.
GUIJT, I. & ROCHE, C. 2014. Does Impact Evaluation in Development Matter? Well, It Depends What It's For! *European Journal of Development Research,* 26**,** 46-54.
HALL, B. L. 2005. In from the Cold? Reflections on Participatory Research from 1970-2005. *Convergence,* 38**,** 5-24.
HARRISON, G. W. 2014. Impact Evaluation and Welfare Evaluation. *European Journal of Development Research,* 26**,** 39-45.
HARTSOCK, N. C. M. 1985. *Money, sex and power : toward a feminist historical materialism,* Boston, Mass., Northeastern University Press.
HAY, C. 2002. *Political analysis,* Houndmills, Basingstoke, Hampshire; New York, Palgrave.
HELD, V. 1993. *Feminist morality : transforming culture, society, and politics,* Chicago, University of Chicago Press.
HENÁIZ, I. & PACHECO, D. 2000. *La Ley INRA en el espejo de la historia. Dos siglos de Reformas Agrarias en Bolivia*, Fundación TIERRA.
HENKEL, H. & STIRRAT, R. 2001. Participation as Spiritual Duty; Empowerment as Secular Subjection. *In:* COOKE, B. K. U. (ed.) *Participation : the new tyranny?* London; New York: Zed Books.
HESSE-BIBER, S. N. (ed.) 2010. *Mixed Methods Research: Merging Theory with Practice,* New York: Guilford Press.
HILDYARD, N., HEGDE, P., WOLVEKAMP, P. & REDDY, S. 2001. Pluralism, Participation and Power: Joint Forest Management in India. *In:* COOKE, B. K. U. (ed.) *Participation : the new tyranny?* London; New York: Zed Books.
HINOJOSA, A., ORMACHEA, E., PÉREZ, M. & SUÁREZ, L. 2001. La Tierra en Bolivia es para los ricos. Latifundistas y gobierno acorralan a campesinos sin tierra. *Alerta Laboral.*
HOBBES, T. & TUCK, R. 1996. *Leviathan,* Cambridge, Cambridge University Press.
HOFSTEDE, G. 1991. *Cultures and organizations : software of the mind,* London, HarperCollins.
HUANACUNI MAMANI, F. 2010. *Buen Vivir / Vivir Bien. Filosofía, políticas, estrategias y experiencias regionales andinas.,* Lima, Coordinadora Andina de Organizaciones Indígenas CAOI.
HYSLOP, J. 1988. Las fronteras estatales extremas del Tawantinsuyu. *In:* DILLEHAY, T. D. & NETHERLY, P. (eds.) *La Frontera del estado Inca. 45 Congreso internacional de Americanistas.* Bogotá, Colombia: Fundación Alexander Von Humboldt y Editorial Abya-Yala
IBARRA GRASO, D. E. 1985. *Pueblos indígenas de Bolivia,* La Paz, Bolivia, Librería Editorial Juventud.
IBARRA GRASO, D. E. 1986. *30.000 años de Prehistoria en Bolivia,* La Paz, Editorial Los Amigos del Libro.
IBARRA GRASO, D. E. 1989. *Examen crítico sobre la antiguedad del hombre en America,* Rosario, Santa Fe, Argentina, Editorial Fundación Ross.
INSTITUTO NACIONAL DE ESTADÍSTICA 2005. *Atlas estadístico de municipios 2005,* La Paz, INE.
INSTITUTO NACIONAL DE ESTADÍSTICA 2013. Estadísticas económicas, minería. *In:* INE (ed.). La Paz: INE.
JARRO, G. 2010. *RE: Personal Communication.* Type to POLAR, V.
JETT, S. C. 1978. Navajo Seasonal Migration Patterns. *Kiva,* 44**,** 11.

JIMÉNEZ LORA, G. 2001. *Percepciones de los Maestros Acerca de la Docencia en el Norte de Potosí. Una mirada etnográfica a lo que dicen y hacen los docentes.* MSc in Intercultural Bilingual Education, Universidad Mayor de San Simón.

JOHNSON, N. L., LILJA, N. & ASHBY, J. A. 2003. Measuring the impact of user participation in agricultural and natural resource management research. *Agricultural Systems,* 78**,** 287-306.

JOYCE, R. A. & LOPIPARO, J. 2005. Doing Agency in Archeology. *Journal of Archeological Method and Theory,* 12**,** 11.

KABEER, N. 1994. *Reversed realities : gender hierarchies in development thought,* London ; New York, Verso.

KABEER, N. 1999. The Conditions and Consequences of Choice: Reflections on the Measurement of Women's Empowerment.: United Nations Research Institute for Social Development.

KARSTEN, R. 1932. *Indian Tribes of the Argentine and Bolivian Chaco,* New York, AMS Press.

KEITH, R. G. 1976. Origen del sistema de hacienda. El valle de Chancay. *In:* MATOS MAR, J. (ed.) *Hacienda, comunidad y campesinado en Perú.* Lima: Instituto de Estudios Peruanos.

KLEIN, H. S. 2011. *A concise history of Bolivia,* Cambridge, U.K.; New York, NY, U.S.A., Cambridge University Press.

KOLATA, A. L. 1983. The South Andes. *In:* JENNINGS, J. D. (ed.) *Ancient South Americans.* San Francisco: W. H. Freeman ad Company.

KOLATA, A. L. 1993. *The Tiwanaku: Portrait of an Andean Civilization,* Cambridge, MA, Blackwell.

KWOK-FU WONG, C. 2003. Empowerment as a panacea for poverty --old wine in new bottles? Reflections on the World Bank's conception of power. *Progress in Development Studies,* 3**,** 307-322.

LAYARD, P. R. G. 2006. *Happiness : lessons from a new science,* London, Penguin Books.

LEMA, A. M. 2001. *De la huella al impacto: la participación popular en municipios con población indígena (Urubichá, Gutiérrez, Villa Montes),* La Paz, Fundacion Pieb.

LEMA, R., MENESES, O., CRESPO, A. & MUÑOZ-REYES, R. 2006. Evaluación de Efectos e Impactos del SIBTA: Informe Final. La Paz: Ministerio de Desarrollo rural, Agropecuario y Medio Ambiente.

LENSINK, R. 2014. What Can We Learn from Impact Evaluations? *European Journal of Development Research,* 26**,** 12-17.

LEWIS, D. 2011. Tidy Concepts, Messy Lives: Defining Tensions in the Domestic and Overseas Careers of U.K. Non-Governmental Professionals. *In:* MOSSE, D. (ed.) *Adventures in Aidland : the anthropology of professionals in international development.* New York: Berghahn Books.

LEWIS, D. & MOSSE, D. 2006. Theoretical Approaches to Brokerage and Translation in Development. *In:* LEWIS, D. & MOSSE, D. (eds.) *Development brokers and translators : the ethnography of aid and agencies.* Bloomfield, CT: Kumarian Press.

LIENDO, R. 2009. *Participación Popular y el Movimiento Campesino Aymara,* La Paz, Fundacion Tierra.

LONG, N. 2001. *Development sociology : actor perspectives,* London, Routledge.

LOPEZ, J. 2003. *Society and its metaphors : language, social theory and social structure,* New York [u.a.], Continuum.

LÓPEZ, J. & SCOTT, J. 2000. *Social structure,* Buckingham [England]; Philadelphia, Open University Press.

LORA, G. 1970a. *Historia del Movimiento Obrero Boliviano (1933 - 1952),* La Paz, Los Amigos del Libro.

LORA, G. 1970b. *Historia del Movimiento Obrero Boliviano (1933 - 1952),* La Paz, Los Amigos del Libro.
LUGONES, M. 2009. Hacia una lectura decolonial de chacha-warmi. Repensando el mestizaje: XIII Reunión Anual de Etnología.
LUKES, S. 2005. *Power : a radical view,* Houndmills, Basingstoke, Palgrave Macmillan.
LUNA, I. 2012. Inician reversión de tierras. *El Dìa*.
MACHIAVELLI, N. & BULL, G. 1999. *The prince,* London, England ; New York, N.Y., USA, Penguin.
MADRID, R. 2006. Politics, socioeconomic status, and indigenous identity in Latin America: The Bolivian Case. *2006 Meeting of the Latin American Studies Association.* San Juan, Puerto Rico: Dept. of Government, Univ of Texas at Austin.
MAITA, R. 2010. Plan Operativo Anual. Programa "Desarrollo de cultivos extensivos en el departamento de Tarija". Yacuiba: PROINPA Foundation.
MALPASS, M. A. 1996. *Daily Life in the Inca Empire,* Westport, CT, Greenwood Press.
MANSURI, G. & RAO, V. 2013. *Localizing Development: Does Participation Work?,* Washington, D.C., World Bank.
MARKHAM, C. E. 1871. On the Geographical Positions of the Tribes Which Formed the Empire of the Incas, with an Appendix on the Name "Aymara". *Journal of the Royal Geographical Society of London,* 41**,** 281-338.
MARTIN, R. 1977. *The sociology of power,* London, Routledge and Kegan Paul.
MARX, K. 1976. The Eighteenth Brumaire of Louis Bonaparte. *In:* HOWE, I. (ed.) *Essential works of socialism.* New Haven: Yale University Press.
MASHNSHNEK, C. O. 1978. Aspectos mítico-religiosos en la economía de los Mataco del Chaco Central (República Argentina). *Revista Española de Antropología Americana***,** 181.
MASLOW, A. H. 1943. A Theory of Human Motivation. *Psychological Review,* 50**,** 370-396.
MCLENNAN, G. 1984. Critical or Positive Theory? a comment on the Status of Anthony Giddens' Social Theory. *Theory, Culture and Society,* 2**,** 123-129.
MEGGERS, B. J. 1999. *Amazonia: hombre y cultura en un paraiso ilusorio,* Mexico, Siglo XXI Editores S.A.
MEGGERS, B. J. 2010. *Prehistoric America: an ecological perspective,* New Brunnswick, NJ, Transaction Publishers.
MENDOZA T., F. & PATZI G., F. 1997. *ATLAS de los Ayllus del Norte de Potosí, Territorio de los Antiguos Charka,* Potosi, Bolivia, Comisión Europea - Delegación en Bolivia.
MESA G., C. D. 1983. *Presidentes de Bolivia: entre urnas y fusiles,* La Paz, Gisbert & Cia.
MESA, J. D., GISBERT, T. & MESA G, C. D. 1997. *Historia de Bolivia,* La Paz, Editorial Gisbert.
METRAUX, A. 1982. How the first woman emerged from underground. *In:* WILBERT, J. & SIMONEAU, K. (eds.) *Folk literature of the Mataco indians.* Los Angeles: University of California.
MILLER, J. B. 1974. *Psychoanalysis and women,* Harmondsworth, Penguin.
MIRANDA, H. A. 2002. El Caso Pananti y el Derecho a la Tierra en Bolivia. Informe del Estudio sobre la violación de los Derechos Económicos, Sociales y Culturales (DESC). Santa Cruz, Bolivia: Fundación TIERRA.
MIRTENBAUM, J. 2005. Eastern Autonomy in contemporary Bolivia: An Exercise in Darwininan-Balkan Logic. *The Narco News Bulletin* [Online], Article 1378. Available: http://www.narconews.com/Issue38/article1378.html [Accessed 23 March 2009].
MOHAN, G. & STOKKE, K. 2000. Participatory development and empowerment: the dangers of localism. *Third World Quarterly,* 21**,** 247-268.
MONTES, P. & DORADO, C. 2007. Objetivos de Desarrollo del Milenio. POTOSÍ: Situación Actual, Evaluación y Perspectivas. *In:* PNUD (ed.) *Proyecto BOL/50863.* La Paz, Bolivia: Prefectura de Potosí.

MORALES A., J. A. 1994. Ajuste Macroeconómico y Reformas Estructurales en Bolivia, 1985-1994. *In:* ECONÓMICAS, I. D. I. S. (ed.). La Paz, bolivia: IISEC.
MORIN, A. 2004. A Neurocognitive and Socioecological Model of Self-Awareness. *Genetic, Social, and General Psychology Monographs,* 130**,** 197-222.
MORIS, J., COPESTAKE, J. G. & OVERSEAS DEVELOPMENT, I. 1993. *Qualitative enquiry for rural development : a review,* London, Intermediate Technology Publications on behalf of the Overseas Development Institute.
MORRISON, K. 2006. *Marx, Durkheim, Weber : formations of modern social thought,* London; Thousand Oaks, Calif., Sage.
MOSELEY, M. E. 1993. *The Incas and their ancestors. The Archaeology of Peru: with 225 illustrations,* New York, Thames and Hudson.
MOSER, C. O. N. 2006. Asset-based Approaches to Poverty Reduction in a Globalized Context. An introduction to the asset accumulation policy and summary of workshop findings. Washington, DC: The Brookings Intitution; Global Economy and Development Working Paper.
MOSHER, A. T. 1957. *Technical Co-operation in Latin-American Agriculture,* Chicago, The University of Chicago Press.
MOSSE, D. 2001. "People's Knowledge", Participation and Patronage: Operations and Representations in Rural Development. *In:* COOKE, B. & KOTHARI, U. (eds.) *Participation : the new tyranny?* London; New York: Zed Books.
MOSSE, D. 2003. The Making and Marketing of Participatory Development. *In:* VAN UFFORD, P., QUARLES, G. & ANTA, K. (eds.) *Moral Critique of Development In Search of Global Responsibilities.* London: Routledge.
MOSSE, D. 2004. Is Good Policy Unimplementable? Reflections on the Ethnography of Aid Policy and Practice. *Development and Change,* 35**,** 639-671.
MOSSE, D. 2005. Global Governance and the Ethnography of International Aid. *In:* MOSSE, D. & LEWIS, D. (eds.) *The aid effect: giving and governing in international development.* London; Ann Arbor: Pluto.
MOSSE, D. 2006. Anti-social anthropology? Objectivity, objection, and the ethnography of public policy and professional communities. *Journal of the Royal Anthropological Institute,* 12**,** 935-956.
MOSSE, D. 2007. Power and the durability of poverty: a critical exploration of the links between culture, marginality and chronic poverty. *Chronic Poverty Research Centre - Working Papers* [Online].
MOSSE, D. 2011a. Introduction: The Anthropology of Expertise and Professionals in International Development. *In:* MOSSE, D. (ed.) *Adventures in Aidland : the anthropology of professionals in international development.* New York: Berghahn Books.
MOSSE, D. 2011b. Social Analysis as Corporate Product: Non Economists / Anthropologists at Work at the World Bank in Washington D.C. *In:* MOSSE, D. (ed.) *Adventures in Aidland : the anthropology of professionals in international development*

New York: Berghahn Books.
MURRA, J. V. 1973. Rite and Crop in the Inca State. *In:* GROSS, D. R. (ed.) *Peoples and Cultures of Native South America.* New York: Natural History Press.
MURRA, J. V. 2002. *El mundo andino, población, medio ambiente y economía,* Lima, IEP Ediciones, Pontificia Universidad Católica del Perú - Fondo Editorial.
MUSOLF, G. R. 2003. *Structure and agency in everyday life : an introduction to social psychology,* Lanham, Md., Rowman & Littlefield.
NARAYAN-PARKER, D. 2000. *Can anyone hear us?,* Oxford ; New York, Published by Oxford University Press for the World Bank.

NARAYAN-PARKER, D. 2006. *Measuring empowerment : cross-disciplinary perspectives,* New Delhi; New York; Washington, D.C., Oxford University Press; World Bank.
NARAYAN-PARKER, D. & WORLD BANK. 2000. *Crying out for change : voices of the poor,* Oxford, Published by Oxford University Press for the World Bank.
NARAYAN, D. 1997. *Voices of the poor : poverty and social capital in Tanzania,* Washington, DC, World Bank.
NARAYAN, D. 2005. Conceptual Framework and Methodological Challenges. *In:* NARAYAN-PARKER, D. (ed.) *Measuring Empowerment Cross-Disciplinary Perspectives.* Washington, DC: World Bank.
NARAYAN, D. & WORLD BANK. 2005. *Empowerment and poverty reduction : a sourcebook,* Jaipur, Rawat Publications.
NARAYANAN, P. 2003. Empowerment through Participation: How Effective Is This Approach? *Economic and Political Weekly,* 38**,** 2484-2486.
NAVIA, R. 2012. Abandonan a guaraníes que ocupan Caraparicito. *El Deber*, 13-08-2012.
NELSON, N. & WRIGHT, S. 1995. Power and participatory development: theory and practice. *In:* NELSON, N. & WRIGHT, S. (eds.) *Power and participatory development : theory and practice.* London: ITDG Pub.
NUÑEZ, W., PFAUMANN, P. & GRAF, W. 2003. The Making of a New Agricultural Research and Extension System. The Case of Bolivia. *Berater Innen News,* 2003**,** 25-30.
NUSSBAUM, M. C., SEN, A., UNITED NATIONS. UNIVERSITY. & WIDER. 1993. *The quality of life : a study prepared for the World Institute for Development Economics Research (WIDER) of the United Nations University,* Oxford, Clarendon Press.
NUTLEY, S. M., WALTER, I. & DAVIES, H. T. O. 2007. *Using Evidence: How research can inform public services,* Bristol, The Policy Press.
ORTEGA C., E. & RIVAS V., N. 2004. *Cambios en la Institucional de los INIAS de la Región Andina,* Caracas, IICA/PROCIANDINO.
ORTLOFF, C. R. & KOLATA, A. L. 1993. Climate and Collapse: Agro-Ecological Perspectives on the Decline of the Tiwanaku State. *Journal of Archaeological Science,* 20**,** 26.
PACA 2009. Experiencia con Seguimiento y Evaluación Participativa. *In:* PROGRAMA ALIANZA CAMBIO ANDINO & PROINPA FOUNDATION (eds.) *Sistematización de Experiencias - Caso PRODII.* La Paz: Programa Alianza Cambio Andino.
PADEM 2003. *Empoderamiento de Comunidades Campesinas e Indígenas. Una propuesta para democratizar los municipios rurales.,* La Paz, PADEM.
PARKER, J. 2000. *Structuration,* Buckingham; Philadelphia, Pa., Open University.
PARKINSON, B. 2012. Socia Perception and Attribution. *In:* HEWSTONE, M., STROEBE, W. & JONAS, K. (eds.) *An introduction to Social Psychology.* West Sussex: The British Psychological Society and John Wiley & Sons Ltd.
PARSONS, T. 1963. *On the concept of political power,* [Philadelphia], American Philosophical Society.
PARSSINEN, M. 2002. Confederaciones interprovinciales y grandes señores interétnicos en el Tawantinsuyu. *Boletin de Arqueología PUCP***,** 19.
PAZ BALLIVIAN, D. 2003. Medio Siglo de Reforma Agraria Boliviana. *In:* VARGAS VEGA, J. D. (ed.) *Proceso Agrario en Bolivia.* La Paz: Plural Editores.
PAZ, F. & RUA B., D. 1969. Historia del movimiento y la organización campesina en Bolivia. *In:* OEA, I. I. D. C. A. (ed.) *Proyecto 206 del Programa de Cooperación Técnica.* Bogota, Colombia: Centro Interamericano de Desarrollo Rural y Reforma Agraria.
PICCIOTTO, R. 2014. Is Impact Evaluation Evaluation? *European Journal of Development Research,* 26**,** 31-38.
PIMBERT, M. & PRETTY, J. N. 1995. Parks, People and Professionals: Putting "Participation" into Protected Area Management. UNRISD Discussion Paper.

PLATT, T. 1982. Role of the ayllu in the reproduction of the petty commodity regime in Northern Potosi (Bolivia). *In:* LEHMANN, D. (ed.) *Ecology and exchange in the Andes.* 41 ed. Cambridge: Cambridge University Press.

PLATT, T., BOUYSSE-CASSAGNE, T. & HARRIS, O. 2006. *Qaraqara-Charka: Mallku, Inka y Rey en la Provincia de Charcas (siglos XV-XVII). Historia antropológica de una confederación aymara. Edición documental y ensayos interpretativos,* La Paz, Plural Editores.

PLOURDE, A. M. & STANISH, C. 2006. The Emergence of Complex Society in the Titicaca Basin. *In:* ISBELL, W. H. & SILVERMAN, H. (eds.) *Andean Archaeology III: North and South.* New York: Springer.

PLURINATIONAL STATE OF BOLIVIA 2007. Revolución rural, Agraria y forestal. *In:* MINISTERIO DE DESARROLLO RRURAL, A. Y. M. A. (ed.) *Plan de Desarrollo Sectorial. Revolución Rural, Agraria y Forestal.* La Paz: Ministerio de Desarrollo Rural, Agropecuario y Medio Ambiente.

PLURINATIONAL STATE OF BOLIVIA 2009. Bolivia: Constitución Política del Estado. *In:* NATIONAL CONGRESS OF BOLIVIA (ed.) *BO-CPE-20090207.* Bolivia Lexivox portal jurídico.

PLURINATIONAL STATE OF BOLIVIA 2010a. "Ley de la Educación "Avelino Siñani - Elizardo Pérez". *In:* ASSEMBLY, P. L. (ed.) *070.* Bolivia: Gaceta Oficial de Bolivia.

PLURINATIONAL STATE OF BOLIVIA 2010b. Ley Marco de Autonomías y Descentralización "Andrés Ibañez". *In:* ASSEMBLY, P. L. (ed.) *031.* Bolivia: Government of Bolivia.

POLAR, V. 2012. Estudio de Caso: Levantamiento de Línea Base en la Intervención de Visión Mundial - Bolivia para la Seguridad Alimentaria. *In:* INNOVANDES (ed.) *Base Line Studies.* La Paz: International Potato Centre.

POLAR, V., FERNÁNDEZ, J., ASHBY, J., QUIROS, C. A. & ROA, J. I. 2011a. Participatory methods and the co-production of agricultural advisory services. Results from four case studies in Bolivia and Colombia. *Social and Health Sciences Working Paper,* 2011**,** 107.

POLAR, V., FERNANDEZ, J., FUENTES, W., VILLARROEL, T., ASHBY, J. & PAZ, R. 2011b. Recuperación, manejo y uso sostenible de la agrobiodiversidad en Norte Potosí, Bolivia. *In:* THIELE, G., QUIROS, C. A., ASHBY, J., HAREAU, G., ROTONDO, E., LOPEZ, G., PAZ YBARNEGARAY, R., OROS, R., ARÉVALO, D. & BENTLEY, J. W. (eds.) *Métodos participativos para la inclusión de los pequeños productores rurales en la innovación agropecuaria: Experiencias y alcances en la región andina 2007-2010.* Lima: Alianza Cambio Andino.

PONCE SANGINÉS, C. 2004. *Estudio sobre economía y tecnología en Tiawanaku prehispánico: Ensayo de síntesis arqueológica,* La Paz, Bolivia, Universidad Americana: Producciones CIMA.

PRADA ALCOREZA, R. 2008. *Subversiones indígenas,* La Paz, CLACSO-Muela del Diablo Editores-Comuna.

PRODII 2008. Proyecto "Recuperación, Manejo y Uso Sostenible de Recursos de la Agrobiodiversidad en el Norte de Potosì". Llallagua, Blivia: PRODII.

PUENTE CALVO, R. 2011. *Recuperando la memoria. Una historia crítica de Bolivia,* La Paz, UPS Editorial.

PURI, E. 2004. Understanding Participation: Theoretical Foundations and Practical Implications. *Economic and Political Weekly,* 39**,** 2511-2517.

QUEREJAZU LEWIS, R. 1989. *Bolivia prehisp*nica,* La Paz, Bolivia, Librer*a Editorial "Juventud".

QUIROS TORRES, C. A., DOUTHWAITE, B., ROA VELASCO, J. I. & ASHBY, J. 2004. Colombia, Latin America and the Spread of Local Agricultural Research Committees (CIALS): Extension Through Farmer Research. *In:* RIVERA, W. & ALEX, G. (eds.) *Demand-Driven Approaches to Agriculture Extension.* Washington DC: The World Bank.

RAHNEMA, M. 1990. Participatory Action Research: The "Last Temptation of Saint" Development. *Alternatives: Global, Local, Political,* 15**,** 199-226.
RHOADES, R. E. & BOOTH, R. H. 1982. Farmer-back-to-farmer: A model for generating acceptable agricultural technology. *Agricultural Administration,* 11**,** 127-137.
ROWLANDS, J. 1995. Empowerment examined. *Development in Practice,* 5**,** 101 - 107.
ROWLANDS, J. 1997. *Questioning Empowerment,* London, Oxfam.
RYAN, A. B. 2006. Post-Positivist Approaches to Research. *In:* ANTONESA, M. (ed.) *Researching and writing your thesis : a guide for postgraduate students.* Maynooth: NUI Maynooth].
RYAN, R. M., SAPP, AISLINN R. 2007. Basic psicological needs: a slef-determination theory perspective on the promotion of wellness across development and cultures. *In:* GOUGH, I., MCGREGOR, J. A. (ed.) *Wellbeing in Developing Countries: From Theory to Research.* Cambridge: Cambridge University Press.
SADAN, E. 2004. Empowerment and Community Planning. www.mpow.org.
SAGÁRNAGA, J. 2007. Investigaciones arqueológicas en Pariti (Bolivia). *Anales del Museo de América,* 2007**,** 67-88.
SAIGNES, T. 1986. *En busca del poblamiento étnico de los andes bolivianos (Siglo XV y XVI),* La Paz, MUSEF.
SAIGNES, T. 1991. Lobos y Ovejas. Fomación y desarrollo de los Pueblos y Comunidades en el Sur Andino (Siglos XVI - XX). *In:* MORENO YÁÑEZ, S., SALOMON, F. & SOCIAL SCIENCE RESEARCH COUNCIL (US) (eds.) *Reproducción y tranformación de las sociedades andinas, siglos XVI-XX.* Quito, Ecuador: ABYA-YALA: MLAL.
SAMPSON, R. V. 1965. *Equality and power,* London, Heinemann.
SANTAMARIA, D. J. 1977. La propiedad de la tierra y la condición social del indio en el Alto Perú 1780-1810. *Desarrollo Económico,* 17**,** 253-271.
SCITOVSKY, T. 1992. *The joyless Economy : The psychology of human satisfaction,* Oxford ; New York, Oxford University Press.
SCOONES, I. 1998. Sustainable rural livelihoods: a framework for analysis. *In:* IDS (ed.) *IDS Working Papers.* Sussex: IDS.
SCOONES, I. 2009. Livelihoods perspectives and rural development. *Journal of peasant studies,* 36**,** 171-196.
SCOONES, I. & THOMPSON, J. 1994. Knowledge, power and agriculture - towards a theoretical understanding. *In:* SCOONES, I., THOMPSON, J. & INTERMEDIATE TECHNOLOGY DEVELOPMENT GROUP (eds.) *Beyond farmer first : rural people's knowledge, agricultural research and extension practice.* London: Intermediate Technology.
SCOONES, I., THOMPSON, J. & INTERMEDIATE TECHNOLOGY DEVELOPMENT GROUP 1994. *Beyond farmer first : rural people's knowledge, agricultural research and extension practice,* London, Intermediate Technology.
SCHAEDEL, R. P. 1988. Andean World View: Hierarchy or Reciprocity, Regulation or Control? *Current Anthropology,* 29**,** 768-775.
SEN, A. 1995. Gender inequality and theories of justice. *In:* NUSSBAUM, M. A. G., JONATHAN (ed.) *Women, Culture, and Development: A study of Human Capabilitie.* Oxford: Clarendon Press.
SEN, A. 2001. *Development as freedom,* New York, Oxford University Press.
SEN, A. & FOSTER, J. E. 1997. *On economic inequality,* Oxford, Clarendon Press.
SENAMI & INE 2012. Estadisticas del Medio Ambiente. *Decade.* La Paz: Instituto Nacional de Estadística - Bolivia.
SEWELL, W. H. 1992. A theory of structure: duality, agency and transformation. *American Journal of Sociology,* 98**,** 1-29.
SHULTZ, J. 2000. Bolivia's Water War Victory. *Earth Island Journal,* 15**,** 2.

SILVERBLATT, I. 1978. Andean Women in the Inca Empire. *Feminist Studies,* 4**,** 37-61.
SILLIMAN, S. 2001. Agency, practical politics and the archeaology of culture contact. *Journal of Social Archeaeology,* 1**,** 19.
SOAS 2009. SOAS Research Ethics Policy. *In:* BOARD, S. A. (ed.). London, UK: SOAS.
SPRY, T. 2006. Performing Autoethnography. *In:* HESSE-BIBER, S. N. & LEAVY, P. (eds.) *Emergent methods in social research.* Thousand Oaks: Sage Publications.
STANFORD, D. J. & BRADLEY, B. A. 2012. *Across Atlantic ice: the origin of America's Clovis culture,* Berkeley, University of California Press.
STANISH, C. 2003. *Ancient Titicaca: The Evolution of Complex Society in Southern Peru and Northern Bolivia,* London, England, Univeristy of California Press.
STANISH, C., DE LA VEGA, E., MOSELEY, M., WILLIAMS, P. R., CHÁVEZ, C., VINING, B. & LAFEVRE, K. 2010. Tiwanaku trade patterns in southern Peru. *Journal of Anthropological Archaeology,* 29**,** 8.
STAVIG, W. & SCHMIDT, E. 2008. *The Tupac Amaru and Catarista Rebellions. An Anthology of Sources,* Indianapolis, Indiana, Hackett Publishing Company, Inc.
STEWARD, J. H. & FARON, L. C. 1959. *Native peoples of South America,* New York, McGraw-Hill.
SUMNER, L. W. 1996. *Welfare, happiness, and ethics,* Oxford, Clarendon Press.
SZTOMPKA, P. Year. Evolving Focus on Human Agency in Contemporary Social Theory. *In:* Agency and structure : reorienting social theory, 1994 1994 Yverdon, Switzerland; Langhorne, Pa.: Gordon and Breach.
TAYLOR, H. 2001. Insights from Management and Labour Process Perspectives. *In:* COOKE, B. & KOTHARI, U. (eds.) *Participation : the new tyranny?* London; New York: Zed Books.
TEIJEIRO VILLARROEL, J. 2007. *Regionalización y diversidad étnica cultural en las tierras bajas y sectores del subandino amazónico y platense de Bolivia,* La Paz - Bolivia, Plural Editores.
THE POLITICAL SCENE 2009. Monthly review: February 2009: The political scene. *Country Report. Bolivia***,** 9-11.
THE POLITICAL SCENE 2011. Country Report. . *Bolivia,* No. 11**,** 10-12.
THIELE, G. 2000. Bibliography of participatory research in CIP [Bibliografia de investigación participativa en CIP]. Lima, Peru: International Potato Center.
THIELE, G., DEVAUX, A., REINOSO, I., PICO, H., MONTESDEOCA, F., PUMISACHO, M., VELASCO, C., FLORES, P., ESPRELLA, R., THOMANN, A. & MANRIQUE, K. 2011. Milti-stakeholder platforms for innovation and coordination in market chains: Evidence from the Andes. *In:* DEVAUX, A., ORDINOLA, M. & HORTON, D. (eds.) *Innovation for Development: The Papa Andina Experience.* Lima, Peru: International Potato Center.
THIELE, G., WANDSWORTH, J. & VELEZ, R. 1998. Creating linkages: lessons from agricultural research and extension liaison in lowland Bolivia. *European Journal of Agricultural Education and Extension,* 4**,** 213-224.
THRUPP, L. A., CABARLE, B. & ZAZUETA, A. 1994. Participatory Methods In Planning & Political Processes: Linking the Grassroots & Policies For Sustainable Development. *Agriculture and Human Values,* 11**,** 77-84.
TITI, V. & SINGH, N. C. 1995. Empowerment for Sustainable Development: An Overview. *In:* TITI, V., SINGH, N. C. & INTERNATIONAL INSTITUTE FOR SUSTAINABLE DEVELOPMENT. (eds.) *Empowerment for sustainable development : toward operational strategies.* London: Zed Books [in association with the] International Institute for Sustainable Development.
TONER, C. H. 2006. Aristotelian Well-Being: A Response to L. W. Sumner's Critique. *Utilitas,* 18**,** 218-231.
TOWLE, M. A. 2007. *The Ethnobotany of Pre-Columbian Peru,* New Jersey, Aldine Transaction.
TRIANDIS, H. C. 1995. *Individualism & collectivism,* Boulder, Colo. ; Oxford, Westview Press.

TRIGO, E., PIÑEIRO, M. & SÁBATO, J. F. 1983. La cuestión tecnológica y la organización de la investigación agropecuaria en América Latina. *Desarrollo Económico,* 23**,** 99-119.
TROCHIM, W. M. 2000. *The Research Methods Knowledge Base,* Cincinati, OH, Atomic Dog Publishing.
UN 1993. *Agenda 21: Earth Summit - The United Nations Programme of Action from Rio,* New York, United Nations.
UN PERMANENT FORUM ON INDIGENOUS ISSUES 2009. Mission to Bolivia. Report and Recomendations. *In:* UNITED NATIONS (ed.).
UNITED NATIONS DEVELOPMENT GROUP 2003. *Indicators for Monitoring the Millennium Development Goals (Definitions, Rationale, Concepts and Soruces),* New York, United Nations.
UNITED NATIONS. 1948. The Universal Declaration of Human Rights. *In:* NATIONS., U. (ed.). New York: United Nations.
UNITED NATIONS. 1993. *Agenda 21: programme of action for sustainable development; Rio Declaration on Environment and Development; Statement of forest principles : the first text of agreements negotiated by governments at the United Nations Conference on Environment and Development (UNCED), 3-14 June 1992, Rio de Janeiro, Brazil,* New York, United Nations.
UNITED NATIONS. & INTERNATIONAL COURT OF JUSTICE. 1945. Charter of the United Nations and Statute of the International Court of Justice. *In:* UNITED NATIONS., I. C. O. J. (ed.). New York: United Nations, Department of Public Information.
UPHOFF, N. T. & CORNELL UNIVERSITY. RURAL DEVELOPMENT COMMITTEE. 1986. *Local institutional development : an analytical sourcebook with cases,* West Hartford,Conn, Kumarian Press.
URIOSTE, M. 1992. Necesidad de una ley de comunidades campesinas e indígenas. *In:* RURAL, C. D. E. A. Y. S. (ed.) *Legislación agraria y tenencia de la tierra.* La Paz: San Marcos.
VILLCAZANA, L. 2008. PM&E Conceptualization. *In:* PROINPA FOUNDATION (ed.) *Field Evaluation Formats.* Yacuiba: PROINPA Foundation.
WEBER, M., ROTH, G. & WITTICH, C. 1978. *Economy and society : an outline of interpretive sociology,* Berkeley ; London, University of California Press.
WENDT, A. E. 1987. The Agent-Structure Problem in International Relations Theory. *International Organization,* 41**,** 335-370.
WENDT, A. E. 1999. *Slocial Theory of International Politics,* Steve Smith, Cambridge University Press.
WENNERGREN, E. B. & WHITAKER, M. D. 1975. *The Status of Bolivian Agricuclture,* New York, Praeger.
WHITE, H. & PHILLIPS, D. 2012. Addressing attribution of cause and effect in small n impact evaluations: towards an integrated framework. *Working Paper* [Online], 15. Available: http://www.3ieimpact.org/media/filer/2012/06/29/working_paper_15.pdf.
WHITE, S. C. 2009. Analyzing Wellbeing: A Framework for Development Practice. *In:* BATH, U. O. (ed.) *Wellbeing in Developing Countries WeD.* Bath: University of Bath.
WILSON, S. R., LEVINE, K. J., CRUZ, M. G. & RAO, N. 1997. Attribution Complexity and Actor-Observer Bias. *Journal of Social Behavior and Personality,* 12**,** 709-726.
WORLD BANK 1994. The World Bank and Participation. Washington, D.C.: Operations Policy Department, World Bank.
WORLD BANK 2000. *World Development Report 200/2001: Attacking poverty,* Oxford, Oxford University Press.
WORLD BANK 2011a. *A Break with History: Fifteen Years of Inequality Reduction in Latin America. ,* Washington, D. C., World Bank.

WORLD BANK 2011b. Project Appraisal Document on a Proposed Credit to the Plurinational State of Bolivia for the Agricultural Innovation and Service Project. *Report No: 57824-BO.* La paz: World Bank.

WORLD BANK. 1990. *World Development Report 1990: Poverty,* New York, Oxford University Press.

WORLD BANK. 1997. *World Development Report 1997: The state in a changing world,* Oxford, Oxford University Press.

WORLD BANK. 2000. *World development report : 2000/2001 : attacking poverty,* New York ; Oxford, Oxford University Press for the World Bank.

YAMAMOTO, J., FEIJOO, A.R., LAZARTE, A. 2008. Subjective Wellbeing: An alternative Approach. *In:* COPESTAKE, J. G. (ed.) *Wellbeing and development in Peru : local and universal views confronted.* 1st ed. New York: Palgrave Macmillan.

ZAPATA, V., GANDARILLAS, E., HERNANDES, L. A., QUIROS, C. A., FERNANDEZ, J., POLAR, V. & ALMANZA, J. (eds.) 2005. *Metodologìas Participativas para la innovaciòn tecnològica agroecueria,* Cochabamba: Centro Internacional de Agricultura Tropical.

NUMBER OF INTERVIEW			

Appendix 1. Survey questionnaire

SURVEY ON SOCIAL CAPITAL AND EMPOWERMENT

Name of numerator .....

Date:..... Start Time: .....End Time: .....

Survey reviewed by:.....

***Instructions for the numerator**:*

1. *INSTRUCTIONS WILL BE WRITTEN IN THIS TYPE OF SCRIPT.*
2. *Before or at the end of the interview, in each page, the survey number should be written on every page where it says NUMBER OF INTERVIEW. This number refers to the number assigned to the family in the list of families to be interviewed.*
3. *Please deliver the survey during a time of the day when the farmer has spare time.*
4. *This survey will be applied to members of selected communities and from the list of samples. It is important to interview the head of household or a responsible adult.*
5. *Start the interview with the explanation of the purpose of the interview and the use that will be given to the information. If the interviewee does not agree to participate in the survey, MARK "0" in the list of families to interview and close the interview.*

Explanation on the purpose of the survey.

We are interviewing families on their needs, and the way they relate to the community so we can later work to solve some of the problems in a participatory way. We want to know if the work we are doing with projects is helping communities to solve their problems. This is why, when we are finished with this work we will come back again to interview families again, to learn if improvements were achieved or not.

Explanation on how and for what purpose the information will be used.

This information will be useful to learn about the needs y problems in the community. Afterwards there will be a meeting to share results from the survey with the community and with service providers (NGO's and others that are working with projects here) and the producer organizations, in order to learn and understand better the needs of communities,

If you agree to participate we would like to ask you some questions.

The interviewee agreed to participate _____

NUMBER OF INTERVIEW			

IDENTIFICATION

FILL IN THIS INFORMATION BEFORE YOU START THE INTERVIEW

1. Location: CIRCLE ONLI ONE SELECTION FOR EVERY CODE *A,B,C & D.*

Code A	**Code B**	**Code C**	**Code D**
1. Bolivia	1. PRODII – Tubers	1. Uma Uma	1. Charata
			2. Banduriri
			3. Pocorasi
			4. Torko
			5. Tuica
			6. Labuyo
			7. Kollpa K'asa
		2. Tomoyo	1. Senajo
			2. Ñuñumayani
			3. Quewayllani
			4. Tutufaya
			5. Tejori
			6. WañaQota
			7. Ticapampa
			8. Tomoyo
		3. Qhayana	1. Japo
			2. Paquiri
			3. Calachaca
			4. Janquyu-Grande
			5. Chiro Chico
			6. Larquiri
			7. Chiro K'uchu
			8. Hornuta
			9. Condor Kuchu
			10. Janquyu Chico
			11. Lancaya
		4. 31 de Enero	1. Fary Macha Macha
			2. Qoyhuaruma
			3. Kapay Macha Macha
			4. Phito Phari
			5. Uqhururu

NUMBER OF INTERVIEW			

Code A	Code B	Code C	Code D
1. Bolivia	2. PIC Chaco – PROMYM	1. Yacuiba	1. Pananty
			2. Villa Primavera
			3. Sachapera
			4. Tierras nuevas
			5. Sanandita viejo
			6. Tatareada
			7. Ojo del agua
			8. Campo Pajoso
		2. Carapari	1. Cañada Ancha
			2. Fuerte Viejo
			3. Nazareno
			4. Loma Alta
	3. APPLA – Leche	1. Challapata	

2. Altitude (m.) .....

3. GPS Location of the nearest administrative unit: .....

   Lon..... Lat…….

4. Name of Interviewee.....

NUMBER OF INTERVIEW			

Profile of family composition and participation in groups and organizations

1. Please list the different people that live together in your home. Use the CODES at the base of this page. Start with the head of household.

#	Name of family member	Relationship with head of household *See Code [1]*	Gender 1=M 2=F	Age Years	Study now YES/ NO	Years of education Years	Current Occupation *See Code [2]*	Participates in a group or Org. YES / NO	Type of Org/ group *See Code [3]*	Do you hold office? YES/ NO	Main purpose of group or Org. *See Code [4]*	How frequent is the attendance to this group or Org.? *See Code [5]*
1		1= Head of household										
2												
3												
4												
5												
6												

Code [1] Relationship to head of household
1. Head of household
2. Espouse of head of household
3. Child of head of household
4. Father/Mother of head of household
5. Brother/Sister, Step Child
6. Step Father/Mother
7. Other specify…….

***Code [2]* Occupation**
1. Farmer
2. Trader
3. Processor
4. Craftsman
5. Student
6. Work at home
7. Nothing
8. Other, specify……

***Code [3]* Type of Group or Organization**
1. Agricultural Union
2. Organization of native indigenous peoples
3. Group or association of producers for production and/or trade
4. Trader or broker association
5. Credit and/or finance group
6. Irrigation/ water management group
7. Community association or group
8. Health or education, civic or sports group
9. Religious group
10. Political group
11. Youth group
12. Women's group
13. Other: specify ……

***Code [4]* Most important purpose of the group or organization**
1. Trade agricultural products
2. Processing and sale of agricultural products
3. Business or company with other agricultural purpose
4. Provide agricultural credit
5. Agricultural technical assistance
6. Provide agricultural inputs to the group
7. Conservation, water and forest management
8. Loans or non-agricultural credit
9. Community development in education, health, infrastructure, transport
10. Policy influence
11. Religious linkages
12. Other: specify

***Code [5]* Attendance**
1. Attends all meetings
2. Attends most meetings
3. Attends few meetings
4. Never attends meetings

NUMBER OF INTERVIEW			

CONTINUATION: Profile of family composition and participation in groups and organizations

#	Name of family member	Relationship with head of household *See Code [1]*	Gender 1=M 2=F	Age Years	Study now YES/ NO	Years of education Years	Current Occupation *See Code [2]*	Participates in a group or Org. YES / NO	Type of Org/ group *See Code [3]*	Do you hold office? YES/ NO	Main purpose of group or Org. *See Code [4]*	How frequent is the attendance to this group or Org.? *See Code [5]*
7												
8												
9												
10												
11												
12												

Code [1] Relationship to head of household
8. Head of household
9. Espouse of head of household
10. Child of head of household
11. Father/Mother of head of household
12. Brother/Sister, Step Child
13. Step Father/Mother
14. Other specify…….

***Code [2]* Occupation**
1. Farmer
2. Trader
3. Processor
4. Craftsman
5. Student
6. Work at home
7. Nothing
8. Other, specify…….

***Code [3]* Type of Group or Organization**
14. Agricultural Union
15. Organization of native indigenous peoples
16. Group or association of producers for production and/or trade
17. Trader or broker association
18. Credit and/or finance group
19. Irrigation/ water management group
20. Community association or group
21. Health or education, civic or sports group
22. Religious group
23. Political group
24. Youth group
25. Women's group
26. Other: specify ……

***Code [4]* Most important purpose of the group or organization**
13. Trade agricultural products
14. Processing and sale of agricultural products
15. Business or company with other agricultural purpose
16. Provide agricultural credit
17. Agricultural technical assistance
18. Provide agricultural inputs to the group
19. Conservation, water and forest management
20. Loans or non-agricultural credit
21. Community development in education, health, infrastructure, transport
22. Policy influence
23. Religious linkages
24. Other: specify

***Code [5]* Attendance**
5. Attends all meetings
6. Attends most meetings
7. Attends few meetings
8. Never attends meetings

NUMBER OF INTERVIEW			

IDENTIFICATION OF GROUP OR ORGANIZATION FOR QUESTION 2, HEREAFTER

MAKE SURE THAT QUESTIONS 5 – 17 ARE ONLY FOCUSED ON THIS ORGANIZATION OR GROUP

2. Is there a group or organization of agricultural purpose that you regard as very important for the family? (production, marketing, credit, technical assistance, etc.)

   1. YES ( )

   2. NO ( ) **Continue to question No 18.**

3. ¿What is this organization called? _____

4. ¿What is its main purpose? _____
   Make sure that the purpose is from 1 to 8 of CODE *[4] in the table above*

MARK ONLY ONE (A)

1. Trade agricultural products ..... ( )
2. Processing and sale of agricultural products ..... ( )
3. Business or company with other agricultural purpose ..... ( )
4. Provide agricultural credit ..... ( )
5. Agricultural technical assistance..... ( )
6. Provide agricultural inputs to the group..... ( )
7. Conservation, water and forest management..... ( )
8. Loans or non-agricultural credit..... ( )

FROM NOW ON WE WILL OLY TALK ABOUT THIS GROUP OR ORGANIZATION IMPORTANT FOR YOU AND YOUR FAMILY.

5. How many years ago was the group or organization formed? [*Refer name, see Question* 3.] *MARK ONLY ONE (A)*

   1. _____Years. ***(IF NOT KNOWN, CONTINUE TO Q. 6).***

      1. Many years ago – its old ..... ( )
      2. It's new –less ten three years since it was formed..... ( )
      3. It is older than three years..... ( )
      4. Does not know ..... ( )

NUMBER OF INTERVIEW			

6. When the group or organization was formed [Refer to name], did it receive support from any of the following organizations or institutions?

CHECK YES OR NO FOR EACH OPTION (B)

	YES	NO
1. Central Government	( )	( )
2. Local Government	( )	( )
3. Local Leader	( )	( )
4. Producer Organization	( )	( )
5. Local NGO	( )	( )
6. International NGO	( )	( )
7. Private Company	( )	( )
8. Church	( )	( )
9. Other (specify)_____	( )	( )

7. What are the most common relationships between members of the organization? [Refer to name]

CHECK YES OR NO FOR EACH OPTION (B)

	SI	NO
1. Kinship (Family)	( )	( )
2. Friendship	( )	( )
3. Neighbours – (people that know each other)	( )	( )
4. Members or residents of the same community	( )	( )
5. Members of the same ethnic or cultural group	( )	( )
6. Only women.	( )	( )
7. Members of the same church	( )	( )
8. Members of the same political group	( )	( )
9. Producers and traders of the same product	( )	( )
10. People already knew each other before joining the organization	( )	( )
11. People didn't know each other before joining the organization	( )	( )
12. Other (specify)_____	( )	( )

8. Speaking of the group or organization most important for your family, [Refer to name] does it coordinate with other groups or other organizations?

1. YES ( ) ¿With?_____
2. NO ( )

NUMBER OF INTERVIEW			

9. Is the group or organization [Refer to name] formally established?

1. Yes ..... ( )
2. No ..... ( )
3. It's in process..... ( )
4. Not know /does not reply ..... ( )

10. Is this productive organization regarded as most important for your [Refer to name] currently affiliated or belongs to a higher level organization that groups formal or legally other organizations? (Also called second level organization)

1. YES ( ) 2. NO ( )

NOW LET'S TALK ABOUT HOW THIS GROUP OR ORGANIZATION WORKS

11. ¿How often do group members meet [Refer to name]
MARK ONLY ONE (A)

1. Once or more than once a week ..... ( )
2. Once a month ..... ( )
3. Every three months ..... ( )
4. Every six months ..... ( )
5. Once a year ..... ( )
6. Other _____ ..... ( )

12. Which of the following statements best describes how leaders are elected in this group or organization? [Refer to name]
MARK ONLY ONE (A)

1. The group has no formal leaders ..... ( )
2. Through the action of an external person or organization..... ( )
3. Each leader chooses a successor ..... ( )
4. They are elected by a small group of members..... ( )
5. Everyone holds office at some point, by turn ..... ( )
6. Collective agreement among members (not voting) ..... ( )
7. Open election (raising hands) ..... ( )
8. Secret voting ..... ( )
9. Other (specify)_____(.....)

13. If assignment into office is by election in the organization [Refer to name], how long is the appointment period?
MARK ONLY ONE (A)

1. Less than one year ..... ( )
2. One year ..... ( )
3. Between one and two years ..... ( )
4. Over two years ..... ( )
5. Other (specify) _____(.....)

NUMBER OF INTERVIEW			

14. How are decisions made in the group or organization [Refer to name]
MARK ONLY ONE (A)

1. The leader decides and informs members of the organization .....( )
2. The leader asks members about their opinions and then decides .....( )
3. Members discuss and then they decide together .....( )
4. Other (specify)_____ .....( )

15. Has belonging to the organization [Refer to name] brought you any benefit?

1. NO ( ) **Continue with next question (No 16)**
2. YES ( ) **If Yes, continue with the section below**

CHECK YES OR NO FOR EACH OPTION (B)

	SI	NO
1. Access to food, groceries (food for work)	( )	( )
2. Knowledge about new production technologies	( )	( )
3. Ease for input purchase	( )	( )
4. Access to credit for agriculture	( )	( )
5. Access to credit for other purposes	( )	( )
6. Support for processing of agricultural products	( )	( )
7. Support for marketing of agricultural products	( )	( )
8. Access to information	( )	( )
9. Improved income based on sales to new markets	( )	( )
10. Other: specify _____	( )	( )

16. ¿In the organization [Refer to name] are there affiliation fees, dues or monthly payments?

1. Yes..... ( )
2. Does not know .... ( ) **Continue to question 18.**
3. No there aren't ... ( ) **Continue to question 18.**

17. ¿Do members or this group or organization pay their dues? *MARK ONLY ONE (A)*

1. No one pays ..... ( )
2. Less than half pay..... ( )
3. More than half of the members pay, but not all ..... ( )
4. Everyone pays ..... ( )

NUMBER OF INTERVIEW			

NOW WE WOULD LIKE TO DISCUSS TOPICS RELATED TO YOUR FAMILY AND YOUR COMMUNITI

ENSURE THAT THE FOLLOWING QUESTIONS AND ANSWERS REFER TO THE COMMUNITY ORGANIZATION AND NOT TO THE PREVIOUS ORGANIZATION OR GROUP

Collective Action

18. ¿In what way do you and/or members of your family participate in meetings to address important issues for the community: *MARK ONLY ONE (A)*

1	Not done, there are no community meetings. **Skip to question No. 21**	( )
2	A few neighbours get together	( )
3	Our community leaders motivate attendance and bring members together	( )
4	Politicians call for community meetings	( )
5	The producer association or organization is where most of the important issues for the community are discussed	( )
6	Another type of group is where most important issues for the are discussed	( )
7	Other: specify_____ _____	( )

19. During this past year, what issues have been addressed in the **community**? Which of these issues were the most discussed in **community** meetings?

MARK WITH AN (X) the most frequently "addressed" and "debated" issues in each column

	Addressed issue	Debated issue
1. Education and/or health	( )	( )
2. Roads	( )	( )
3. Irrigation, water, forests	( )	( )
4. Agricultural production	( )	( )
5. Technical assistance	( )	( )
6. Market and prices	( )	( )
7. Plans for local development	( )	( )
8. Other topic: specify_____	( )	( )

20. How frequently does the **community** meet to analyse these or other topics?

MARK ONLY ONE (A)

1.	Once a week or more	( )
2.	Once a month	( )
3.	Less than once a month	( )
4.	Other: specify_____	( )

NUMBER OF INTERVIEW			

Individual or family action

21. During this past year, have you or someone from your family joined other people to petition something from politicians or government representatives (local, national, regional)? *MARK ONLY ONE (A)*
    1. Several times..... ( )
    2. A couple of times ..... ( )
    3. Once ..... ( )
    4. Never ..... ( ) **Skip to question 23**

22. Were these petitions successful? *MARK ONLY ONE (A)*
    1. Yes, all were attended favourably .....( )
    2. Some were attended, others were not.....( )
    3. None of them was successful.....( )

NOW WE WOULD LIKE TO TALK ABOUT YOUR EXPERIENCE WITH PARTICIPATION IN THE COMMUNITY *[PARTICIPATORY FRAMEWORKS]*

23. During the last three years, have you personally or someone from your family engaged in any of the following activities? *CHECK YES OR NO FOR EACH OPTION (B)*

	Yes	No
1. Participate actively in planning processes for local development	(…)	(…)
2. Participate actively in the evaluation and/or adjustment of development projects that involve your community.....	(…)	(…)
3. Attended a training to learn how to participate in the market or fair and find better opportunities to sell	(…)	(…)
4. Participated in capacity building to learn how to select and sell better any farm product	(…)	(…)
5. Implemented tests to add value to your products?	(…)	(…)
6. Participated in capacity building about how to negotiate better prices or to establish contacts with traders.	(…)	(…)
7. Participated in tests, evaluation or adjustment of agricultural technology. Ej. Equipment, seeds, pest management	(…)	(…)
8. Participated in agricultural research initiatives	(…)	(…)
9. Attended capacity building to form a Local Agricultural Research Committee	(…)	(…)
10. Attended capacity building on how to manage and establish group savings.....	(…)	(…)
11. Attended capacity building to strengthen capabilities of the organization or group	(…)	(…)

NUMBER OF INTERVIEW			

24. ¿How much influence do you think that someone like you has to improve things in the community where you live?

MARK ONLY ONE OPTION IN EACH COLUMN (A)

	Inside the community	Outside the community
1. A lot	( )	( )
2. Some	( )	( )
3. Very little	( )	( )
4. None	( )	( )

25. If you or someone in your family had to leave for a few days leaving crops and animals, to whome do you think you could leave them for care? *(WRITE DOWN THE FIRST **3 MENTIONED** In the first column of the list below*

26. If you or someone from your family had a problem and needed a loan of money, who do you think might help?

*(WRITE DOWN THE FIRST **3 MENTIONS** In the second column of the list below)*

	25	26
1. No one would help	( )	( )
2. Family	( )	( )
3. Neighbours	( )	( )
4. Religious leader	( )	( )
5. Community leader	( )	( )
6. Leader of the producer association you belong to	( )	( )
7. Police	( )	( )
8. Political leader	( )	( )
9. Other_____	( )	( )

27. If you or someone from your family has difficulties to find labour for an urgent job such as harvest of a crop, and needs help. Who do you think might help?

MARK ONLY ONE (A)

1	You have to hire labour and page wages……..	( )
2	Neighbours or other community members help with communal shared work *(minga, minka, ayni)*	( )
3	Other: Specify_____	( )

28. During the past year, have you worked in collaboration with a relative, neighbour or partner in a group for the exchange of agricultural labour in their farms (minga, minka, ayni)?

1. YES ( )
2. NO ( ) **Skip to question No 30.**

NUMBER OF INTERVIEW			

29. How frequently have you collaborated?

MARK ONLY ONE (A)

1. Once a week or more often .....( )
2. Two or three times a month .....( )
3. Once a month.....( )
4. Only in critical periods: (for example in harvest).....( )
5. Other : Specify_____ .....( )

30. Over the past year have you received support in labour from relatives, colleagues or neighbours?
    1. YES ( )
    2. NO ( ) **Skip to question No 32.**

31. How frequently have you received collaboration?

MARK ONLY ONE (A)

1. Once a week or more often .....( )
2. Two or three times a month .....( )
3. Once a month.....( )
4. Only in critical periods: (for example in harvest).....( )
5. Other : Specify_____ .....( )

32. How much can you and your family rely on the de availability of time from relatives, neighbours and other people to work for you in a collaborative way?

MARK ONLY ONE (A)

1. You can always trust people to collaborate .....( )
2. People collaborate once in a wile if it is very important for us.....( )
3. Sometimes it is very hard for others to collaborate .....( )
4. It is always difficult to find people for collaborative work.....( )
   (minga, minka, ayni)

NUMBER OF INTERVIEW			

Networks and collective support

33. If there was a problem with agricultural production in the community, who would mobilize to solve them? *(WRITE DOWN THE FIRST **3 MENTIONED** In the first column of the list below*

34. Who would lead these initiatives?

*(WRITE DOWN THE FIRST **3 MENTIONED** In the second column of the list below*

	(33) Mobilize	(34) Lead
1. No one would do anything	( )	( )
2. The local municipal government	( )	( )
3. The community organization	( )	( )
4. One or more NGO's	( )	( )
5. Affected stakeholders (affected producers)	( )	( )
6. A producer group or association	( )	( )
7. Other group or association in the community	( )	( )
8. All the community	( )	( )
9. Other: Specify _____	( )	( )

35. During this past year, have you or any one from your family joined other people to complain about an important service for the community, or to ask service providers for improvements on the service?

MARK ONLY ONE (A)

1. Several times ( )
2. A couple of times ( )
3. Once ( )
4. Never ( ) **Skip to question 37**

36. Were these petitions successful?

MARK ONLY ONE (A)

1. Yes, all were answered favourably ( )
2. Some were answered, others were not ( )
3. None had favourable responses ( )

NUMBER OF INTERVIEW			

37. If there was a problem with <u>prices or marketing of agricultural products</u> in the community, who would mobilize to solve them?

*<u>(WRITE DOWN THE FIRST **3 MENTIONED** In the first column of the list below</u>*

38. Who would lead these initiatives?

*<u>(WRITE DOWN THE FIRST **3 MENTIONED** In the second column of the list below</u>*

	(37) Mobilize	(38) Lead
1. No one would do anything.....	( )	( )
2. The local municipal government	( )	( )
3. The community organization	( )	( )
4. One or more NGO's.....	( )	( )
5. Affected stakeholders (producers and or traders)	( )	( )
6. A community social organization.....	( )	( )
Specify_____		
7. A community productive organization	( )	( )
Specify_____		
8. All the community.....	( )	( )

39. During this past year, have you or any one from your family joined other people to negotiate with traders/buyers of their agricultural products about prices or other aspects of trade?
    1. Ye ( )
    2. NO ( ) **Skip to question No42.**

40. ¿How frequently did this negotiation take place?

<u>MARK ONLY ONE (A)</u>

1. Several times.....( )
2. A couple of times .....( )
3. Once .....( )
4. Never .....( )

41. ¿Were these negotiations successful?

<u>MARK ONLY ONE (A)</u>

1. Yes, all were answered favourably ( )
2. Some were answered, others were not ( )
3. None had favourable responses ( )

NUMBER OF INTERVIEW			

42. If there was a problem with <u>the execution of a development project</u> in the community, who would mobilize to solve it? *<u>(WRITE DOWN THE FIRST **3 MENTIONED** In the first column of the list below</u>*

43. Who would lead these initiatives?

*<u>(WRITE DOWN THE FIRST **3 MENTIONED** In the second column of the list below</u>*

	(42) Mobilize	(43) Lead
1. No one would do anything.....	( )	( )
2. The local municipal government	( )	( )
3. The community organization	( )	( )
4. One or more NGO's.....	( )	( )
5. Affected stakeholders (producers and or traders)	( )	( )
6. A community social organization.....	( )	( )
Specify_____		
7. A community productive organization	( )	( )
Specify_____		
8. All the community.....	( )	( )

NOW WE WOULD LIKE TO TALK ABOUT TOPICS RELATED WITH YOUR FAMILY AND THE COMMUNITY

<u>SELECT ONLY ONE OF THE OPTIONS IN EVERY QUESTION</u>

44. What is the main material used in the roofing of your home?
    1. Tiles ..... ( )
    2. Calamine (Metal) ..... ( )
    3. Jatata, palm or other (Tropical) ..... ( )
    4. No roof..... ( )
    5. Other _____..... ( )

45. What is the main material used in the floors of your home?
    1. Concrete - cement ..... ( )
    2. Tile, brick or granite ..... ( )
    3. Wood..... ( )
    4. Earth or sand..... ( )
    5. Jatata, bamboo or other (Tropical) ..... ( )
    6. Other _____..... ( )

NUMBER OF INTERVIEW			

46. What is the main source of water supply in your home?
    1. Piped water ..... ( )
    2. Private well ..... ( )
    3. Communal well ..... ( )
    4. Open reservoir ..... ( )
    5. River or stream ..... ( )
    6. Other _____..... ( )

47. What type of sanitary services does your home have?
    1. Public sewage – toilet in the house ..... ( )
    2. Septic tank ..... ( )
    3. Outdoor latrine ..... ( )
    4. None..... ( )
    5. Other _____..... ( )

48. What source of artificial light is most frequently used in your home?
    1. Public service electricity..... ( )
    2. Private electric generator ..... ( )
    3. Public/private electric system..... ( )
    4. Kerosene, gas ..... ( )
    5. Candles, alcohol ..... ( )
    6. Other _____..... ( )

49. Over the past year was there any time when food was insufficient for your family?
    1. It is never enough for the whole family ..... ( )
    2. Some times it is not enough, some times it is..... ( )
    3. It is always enough ..... ( )
    4. Doesn't know..... ( )

50. Over the past year did you or anyone from your home have any debt with an individual or a financial institution?

    YES ( ) NO ( ) Does not reply ( )

51. Over the past year did your or any one from your home lend money to anyone in the community or outside the community?

    YES ( ) NO ( ) Does not reply ( )

52. Over the past year have you or any one from your home received any remittances or support from relatives that live outside the community?

    YES ( ) NO ( )

53. Over the past year, have you or any one from your home engaged in a business that enabled additional income?

    YES ( ) NO ( )

NUMBER OF INTERVIEW			

54. Over the past year, have you or any one from your home had an occupation or non-agricultural job that allowed a weekly or monthly salary?
    1. All year- 12 months.....( )
    2. Less than 12 months.....( )
    3. No one had a salary .....( )

55. Over the past year, did you or any one from your home hire paid labourers for agricultural works? (that was not labour exchange)
    1. Always.....( )
    2. Once in a wile.....( )
    3. Never.....( )

56. Over the past year, did you or anyone from your home work
    1. Always.....( )
    2. Once in a while.....( )
    3. Never.....( )

57. Over the past year did you or any one from your home hire a tractor or other farm machinery for some agricultural work?
    1. Always.....( )
    2. Once in a while.....( )
    3. Never.....( )

58. ¿What type of equipment and tools for production do you have currently?

MARK YES OR NO IN EACH OPTION (B)

CODE		YES	NO
1	Basic Equipment ..... (picks, shovels, hoes, rakes, manual milking, home processing, etc.)	(…)	(…)
2	Special Equipment ..... (yoke, accessories, fumigation backpack, small milking machine, non-industrial processing equipment etc.)	(…)	(…)
3	Agricultural Machinery ..... (Walking Tractor, milking parlour, industrial transformation, others that require power supply)	(…)	(…)

NUMBER OF INTERVIEW			

59. ¿Do you have or have access to any of the following goods?
MARK YES OR NO IN EACH OPTION (B)

	YES	NO
1. Radio	( )	( )
2. Land Phone	( )	( )
3. Cell Phone	( )	( )
4. TV	( )	( )
5. Sewing machine	( )	( )
6. Electric refrigerator	( )	( )
7. Domestic blender	( )	( )
8. Bicycle	( )	( )
9. Car or other transportation	( )	( )
10. Pump to fumigate	( )	( )
11. Grass chopper	( )	( )
12. Water Pump	( )	( )
13. Rotovator	( )	( )
14. Other specify	( )	( )
15. Other specify	( )	( )

60. To which of the following services do you or your family members have access? (Mark access as being able to obtain services in case needed, regardless of the quality)
MARK ONLY ONE OPTION IN EVERY LINE

		No, never	Yes, but difficult access	Yes, and easily accessible
1	Health centre	( )	( )	( )
2	Hospital	( )	( )	( )
3	Elementary School	( )	( )	( )
4	Secondary School	( )	( )	( )
5	Technical assistance for their farm crops	( )	( )	( )
6	Technical assistance from agrochemical providers	( )	( )	( )
7	Veterinary service for their animals	( )	( )	( )
8	Technical assistance for processing and/or marketing of agricultural products	( )	( )	( )
9	Participation in planning of development projects that involve your community	( )	( )	( )
10	Credit services for agricultural production	( )	( )	( )
11	Credit services for marketing	( )	( )	( )
12	Bulking of agricultural products	( )	( )	( )
13	Fair or agricultural market	( )	( )	( )
14	Agricultural products processing plant	( )	( )	( )
15	Daily transport for agricultural production	( )	( )	( )
16	Other: Specify_____	( )	( )	( )

NUMBER OF INTERVIEW			

61. Over the past year, how much land did your household cultivate?

Area _____in ( ) hectares (ha)
_____ ( ) Another measure SPECIFY _____
Interviewer: at the end of interview convert to (ha)

62. Over the past year, under what system did you and your household cultivate the land?
MARK YES OR NO IN EACH OPTION (B)

	SI	NO
Cultivation in own land	(…)	(…)
Cultivation on rented or lent over money land (anticretico).....	(…)	(…)
Cultivation on other peoples land under submission ..... of part of the production (Split production)	(…)	(…)
Other arrangement SPECIFY _____.....	(…)	(…)

63. Do you have irrigation in any of these plots?
YES ( ) NO ( )

64. From the FOUR main crops cultivated over the past year, how much did you sell?
CHECK UP TO FOUR CROPS

	Crop	¿How much of the production was sold?			
		Not for sale	Less than half	More than half	All for sale
1					
2					
3					
4					

NUMBER OF INTERVIEW			

65. What animal products or animal by-products do you and your household produce?

	Animals, Products and By-products of Animal Origin	Quantity or Number	How much of your production was sold?			
			Not for sale	Less than half	More than half	All for sale
1	Meat and or milk cattle					
2	Pigs					
3	Birds; Chicken, turkeys, ducks, quail					
4	Rabbits, guinea pigs					
5	Goats					
6	Sheep					
7	Llama or vicuna					
8	Bees (apiculture)					
9	Fish					
10	Liters of milk or yogurt					
11	Kilos of Cheese					
12						
13						

66. How long does it take to get to the market or the nearest fair?
_____Hours *[If less than an hour write 0.5]*

67. What is the language most frequently spoken at home?
(NUMBER BY FREQUENCY OF USE (1) THE MOST FREQUENT (5) THE LEAST FREQUENT

1. Spanish..... ( )
2. Quechua..... ( )
3. Aymara..... ( )
4. Guaraní ..... ( )
5. Other: Specify_____ ..... ( )

68. What is the most important religion for the family?
MARK ONLY ONE (A)

1. Catholic..... ( )
2. Christian Protestant..... ( )
3. Mormon..... ( )
4. Jehovah's Witness ..... ( )
5. Other: Specify_____ ..... ( )

69. In general would you say your family's monthly income is:

1. Less than a national minimum wage..... ( )
2. More than the national minimum wage but less than two wages ..... ( )
3. More than two national minimum wages but less than four ..... ( )
4. More than four national minimum wages ..... ( )

THANK YOU VERY MUCH FOR YOUR COOPERATIO

Appendix 2. Detail of Cambio Andino's methods, partner institutions and pilot cases,

Information presented in this appendix was extracted, presented and translated from (Hildyard et al., 2001).

Appendix 2. 1 Detail of methods implemented by Cambio Andino

Acronym	Name of method	Characteristics of method
EPCP	Pariticipatory Market Chain Aproach (PMCA) in Spanish called "Enfoque Participativo de Canedans Productivas"	Fosters interaction between market chain actors to generate commercial, technological and institutional innovations, through a guided, structured and participatory process. EPCP links farmers with other actors from the market chain to identify market opportunities based on demand.
EPT	Participatory evaluation of Technologies, in Spanish called "Evaluación Participativa de Tecnologías"	It is based on a series of tools that identify criteria (agronomic, economic and cultural) and their importance for farmers when they encounter and evaluate a new technology. It informs researchers about the criteria used by farmers to decide the adoption of a technology or not. It redirects and adjusts research agendas.
MyB	Mother and Baby, in Spanish "Mama y Bebé"	It's a participatory breeding process that captures the opinion of producers and other actors from the market chain. They evaluate between 5 to 20 advanced clones of potato, until they select one as a new variety. MyB covers the full cycle of the crop.
SEP	Participatory Monitorin and Evaluation (PM&E), in Spanish "Seguimiento y Evaluación Participativa"	It contributes to the management of community projects to improve and strengthen base organizations. Participants visualize where they are headed to and identify when and where they need to develop changes to achieve these objectives. This allows actors from the project to evaluate and adjust their work in participatory and continuous way.
DOI	Organizational Development for Innovation, in Spanish "Desarrollo Organizacional para la Innovación	It strengthens rural organizations and supports participatory definition of the type of organization needed by a group of producers. For this definition it takes into consideration local needs, promotes and develops participatory leadership and administrative capacity of the organization. It is based on principles of adult education.
EPPR	Empowerment of Small Rural Producers, in Spanish "Empoderamiento de pequeños productores rurales"	Small producers become influential actors in local development, with higher self-esteem, confidence and management capabilities. EPPR promotes solidarity, team work and it strengthens the local organization so small producers can take ownership of their projects.

Appendix 2. 2 Detail of Cambio Andino Partners

Acronym	Name of institution	Type of Partner
-	Papa Andina Initiative	Service Provider *
-	Criolla Oro Asociation	Implementer **
ASOMUDEPAZ	Municipal Association for the Sustainable Development of Small Farmers from San Jacinto (Asociación Municipal para el Desarrollo Sostenible de los Pequeños Agricultores de San Jacinto)	Implementer
CAD	Development Support Centre (Centro de Apoyo al Desarrollo)	Implementer
CIAT - SC	Tropical Agriculture Research Centre - Santa Cruz (Centro de Investigación Agrícola Tropical - Santa Cruz)	Implementer
CIP	International Potato Center (Centro Internacional de la Papa)	Service Provider
CONPAPA	Consortium of Small Producers of Potatoes (Consorcio de Pequeños Productores de Papa)	Implementer
CROPOICA	Colombian Corporation of Agricultural Research (Corporación Colombiana de Investigación Agropecuaria)	Implementer
FEDERACAFE	National Federation of Coffee growers from Colombia (Federación Nacional de Cafeteros de Colombia)	Implementer
INIA	Instituto Nacional de Investigación Agropecuaria	Implementer
IPRA - CIAT	Participatory Research with Farmers - International Center for Tropical Agriculture (Investigación Participativa con Agicultores - Centro Internacional de Agricultura Tropical	Service Provider
IPTK	Tomas Katari Polythechnical Institute (Instituto Politécnico Tomas Katari)	Implementer
ITDG	Intermediate Technology Development Group	Implementer
MARCO Foundation	Fundation of Collaborative Work for Rural Action and Cooperation (Fundación Minga para la Acción Rural y la Cooperación)	Implementer
PBA	PBA Corporation	Service Provider
PIC-COSUDE	Continuos Innovation Progogram - Swiss Cooperation for Development, in Spanish "Programa de Innovación Contínua - Cooperación Suiza para el Desarrollo"	Implementer
PRODII	Programa de Desarrollo Integral Interdisciplinario (Integral Interdisciplinary Development Program)	Implementer
PROINPA Foundation	Foundation for the Promotion and Research on Andean Products (Fundación para la Promoción e Investigación en Productos Andinos)	Service Provider
SEDERA Foundation	Foundaton of Servicefor Agricultural Rural Development (Fundación de Servicio para el Desarrollo Rural Agropecuario)	Implementer
UAGRM	Gabriel Rene Moreno Autonomos University (Universidad Autónoma Gabriel René Moreno)	Implementer
UDEA	University for the Andean Development (Universidad para el Desarrollo Andino)	Implementer
UNAL	National University of Colombia	Implementer
WVB	World Vision Bolivia	Implementer
YANAPAI	YANAPAI Group (Grupo Yanapai)	Implementer

* A Service Provider is an institution that facilitates capacity building in a specific participatory method and who followed up on the field implementation.

** An Implementer is an institution that implemented a technology innovation project and the participatory method in the field

Appendix 2. 3 Detail of Cambio Andino's Pilot Cases

Case	Method	Context	Country	Service Provider	Implementer
1	SEP	Sustainable agriculture and competitiveness of creole potatoes in the municipalities of Granada and Sibate, Cundinamarca	Colombia	PROINPA Foundation	Criolla Oro Association
2	SEP	Area development programs (ADP) in Wiñaypaj, Sntibañez.	Bolivia	PROINPA Foundation	World Vision Bolivia
3	SEP	Association San Francisco de Rumipamba, Canton San Miguel, Province Bolivar and Association Señor de la Justicia from the locality of Shaushi, Canton Quero, Province Tungurahua	Ecuador	IPRA – CIAT	CONPAPA
4	SEP and EPPR	System of Extensive Crop Cultivation in the Chaco of Tarija. Program of continuous innovation in Maize and Groundnuts	Bolivia	PROINPA Foundation and PBA Corporation	PIC – COSUDE /PROINPA
5	SEP and EPPR	Production systems for food security and market linkages in North Potosí	Bolivia	PROINPA Foundation and PBA Corporation	PRODII
6	SEP and EPPR	Project of environmental services in the watersheds of Comarapa and Quirusilla, Santa Cruz	Bolivia	PROINPA Foundation and PBA Corporation	CIAT-SC
7	SEP and EPPR	Improvement of agricultural production in Ravelo, Potosí	Bolivia	PROINPA Foundation and PBA Corporation	IPTK
8	EPT	Equipment for the manual harvesting of coffee	Colombia	IPRA-CIAT	FEDERACAFE
9	EPT	Bio-fortified Andean Beans, Rionegro, Antioquia	Colombia	IPRA-CIAT	CORPOICA
10	EPT	Bio-fortified Andean Beans, Santa Cruz	Bolivia	IPRA-CIAT	UAGRM, El Vallecito Station
11	MyB	Selection of advanced potato clones with market chain focus, Huancavelica and Junín	Peru	CIP	YANAPAI, UDEA, Seed companies, farmers
12	MyB	Selection of varieties with Market chain approach – Papa Granada, Cundinamarca	Colombia	CIP	National University of Colombia and PBA Corporation
13	DOI	Development of fava bean improved varieties, seed production with producer organizations in the Sierra	Peru	PBA Corporation	INIA Peru

Case	Method	Context	Country	Service Provider	Implementer
14	EPCP	Program of participatory research for the sustainable production and transformation of yam in the Atlantic Coast	Colombia	Papa Andina Initiative	ASOMUDEPAZ
15	EPCP	Native Potatoes Market Chain in Chimborazo	Ecuador	Papa Andina Initiative	MARCO Foundation
16	EPCP	Sector of special coffees in Tarapoto	Peru	Papa Andina Initiative	ITDG
17	EPCP	Milk market chain in Cajamarca	Peru	Papa Andina Initiative	ITDG
18	EPCP	Valley fruits in Vallegrande	Bolivia	PROINPA Foundation	CIAT – SC
19	EPCP	Native Potatoes in North Potosí	Bolivia	PROINPA Foundation	CAD
20	EPCP	Milk and cheese in Challapata, Oruro	Bolivia	PROINPA Foundation	SEDERA Foundation

The highlighted lines correspond to the two pilot projects selected for this study. It is important to note the application of the same participatory method SEP and the same inclusion of EPPR elements in both sites. This was one of the main selection criterioa due to its contribution to the national policy on Participatory technology innovation, and its allegued contributions to empowerement. Another element was the initial phase of implementation of both projects in 2008 and the contrast in sites. Futhermore, both projects were supervised by the same Service Provider and the same staff was involved in both projects, serving as control for the homogeneity in capacity building.

Appendix 3. Results from the participatory workshop

I. NORTH POTOSÍ

1. Collectively defined criteria for the selection of communities

- Influence of external factors. One of the reasons why the Chullpa Indigenous District was not considered for the study was that it was too close to Llallagua, the main urban settlement (15 minutes by vehicle). This proximity to Llallagua exercised strong influence in the local production systems due to the upturn of the mining sector and high migration rates that leave many agricultural communities completely unpopulated.
- Proportion of participants vs the total number of families in the community. In the Qhayanas case this criteria was not applied due to the low population density that motivated the inclusion of all the participating communities in every region.
- Size of the community. Larger size communities were preferred.
- Attitude towards the study and data collection. In general communities open to participate in the study were prioritized.
- Different levels of poverty. Communities with different levels of poverty were included in the study.
- Inclusion of no- participating communities. To select non-participating communities their similarity to participating communities was considered in terms of ecology, social characteristics and productive patterns.

2. Characterization of poverty levels and participation in the new project

This section presents a detail of Ayllu Qhayanas, a stratification of communities and their status of participation in the new project delivered by PRODII. Although the participatory workshop developed a detail for all the indigenous districts participating in the project, later processes defined the inclusion of Ayllu Qhayanas alone.

Department: Potosí
Province: Charcas
Municipality: San Pedro de Buena Vista
District: Ayllu Qhayanas

Among the different indigenous districts participating in the project, Ayllu Qhayanas has an intermediate level of poverty. There have been several interventions by institutions in the area mainly due to its high poverty in comparison to the rest of the country.

The status of participation was classified into 4 levels that made reference to the existence of participatory interventions in the area.

0 No participatory interventions
1 A participatory intervention some years ago
2 A participatory intervention in operation
3 A participatory intervention some time ago and in current operation

Appendix 3. 1 Details of communities in Qhayanas

Project	Poverty	Communities	Status of participation	No. of families	No. of participants
Yes	**Very poor** Limited road access Producers have small plots (1-1.5 ha) with high slopes above 4600 m. Few animals approximately (50 llamas), (60 sheep) Most farmers are *canturunas* with low schooling level.	**Japo** No former interventions known	1	80	1
		Paquiri No former interventions known	1	15	2
		Calachaca No former interventions known	1	45	2
		Janquyu-Grande No former interventions known	2	26	3
	Not so poor There are roads connecting to the town of Chiro Farmers have larger plots than the former. Land is more productive There is water for home consumption and irrigation They have some more cattle than the former. Farmers are *originarios* and *agregados*	**Chiro Chico** No former interventions from PRODII but there were other institutions working in the area	2	25	1
		Larquiri No former interventions from PRODII but there were other institutions working in the area	2	52	6
		Chiro K'uchu No former interventions from PRODII but there were other institutions working in the area	2	31	15
		Hornuta No former interventions from PRODII but there were other institutions working in the area	1	35	20
No	**Very poor** High vulnerability (frost, hale) Communities located far from Jankuyu the nearest town, with limited road access Restrictions for agricultural production Producers have small plots (1-1.5 ha) with high slopes. Mostly native grasslands Only primary education available No institutions working in the area	**Condor Kuchu** No former interventions known	0	40	0
		Janquyu Chico No former interventions known	0	35	0
	Not so poor Nost farmers live in the nearest town of Chiru Khasa with access to roads. Farmers have productive land with irrigation	**Lancaya** No former interventions known	0	12	0

II. YACUIBA

1. Collectively defined criteria for the selection of communities

- Influence of external factors. One of the reasons why the Municipality of Carapari was not included later on was because of the influence and proximity of the gas extraction fields in the region.
- Proportion of participants vs the total number of families in the community. This criteria was applied in Yacuiba due to the numerous communities existent.
- Size of the community. Larger size communities were preferred.
- Attitude towards the study and data collection. In general communities open to participate in the study were prioritized.
- Different levels of poverty. Communities with different levels of poverty were included in the study.
- Inclusion of no- participating communities. To select non-participating communities their similarity to participating communities was considered in terms of ecology, social characteristics and productive patterns.

2. Characterization of poverty levels and participation in the new project

This section presents a detail of the stratification of communities in Yacuiba and their status of participation in the new project delivered by PROINPA. Although the participatory workshop developed a detail for the municipalities of Carapari and Yacuiba participating in the project, later processes defined the inclusion of Yacuiba alone.

Department: Tarija
Province: Gran Chaco
Municipality: Yacuiba
Section: First Municipal Section – Yacuiba

Communities were classified according to their level of poverty. The lowest numbers reflect more poverty and the highest numbers less poverty. The classification was conducted separately for communities participating in the project and communities that did not participate.

Communities marked or highlighted were selected in group discussioons considering the selection criteria.

Appendix 3. 2 Details of communities in Qhayanas

Project	Poverty	Communities	No. of families	No. of participants
Yes	**Very poor** (1-2) new communities, recent access to basic services. Migrants from the highlands (3-8) Population of mixed background. Small plots of land 2-4 ha (7-8) Social conflict in the area (1-8) Very few have animals	**(1) La Vertiente** No former interventions known	14	14
		(2) Pananty Applied SEP 3 years ago	51	49
		(3) Itavicua Applied SEP 3 years ago	64	10
		(4) Villa Primavera Applied SEP 3 years ago	107	104
		(5) Cañón Oculto Applied SEP 3 years ago	80	22
		(6) Campo Grande Applied SEP 3 years ago	280	6
		(7) La Grampa Applied SEP 3 years ago	210	10
		(8) Villa Ingavi Applied SEP 3 years ago	38	9
	Not so poor Good road access and existence of basic services Land holding above 4 ha Farmers have some animals (pigs, sheep and goats) (13) Mixed background population and presence of migrants from the high Andes	**(9) Sachapera** No former interventions known	93	16
		(10) Lapachal Alto No former interventions known	97	11
		(11) Busuy Applied SEP 3 years ago	50	9
		(12) Yaguacua Applied SEP 3 years ago	220	12
		(13) Tierras Nuevas Applied SEP 3 years ago	146	11
		(14) Villa El Carmen Applied SEP 3 years ago	220	18
No	**Very poor** Mixed background population with influence of migrants from the highlands. Small plots of land or marginally located land Few animals	**(1) Sanandita Viejo** Applied SEP 3 years ago	34	0
		(2) Barrial Applied SEP 3 years ago	80	0
		(3) Aguairenda No former interventions known	72	0
		(4) San Francisco del Inti Applied SEP 3 years ago	120	0
		(5) Tatarenda No former interventions known	33	0
	Not so poor Communities located closer to towns with full access to basic services Mixed background	**(6) Limitas** No former interventions known	25	0
		(7) Ojo del Agua Applied SEP 3 years ago	80	0
		(8) Campo Pajoso No former interventions known	155	0
		(9) Sanandita No former interventions known	165	0

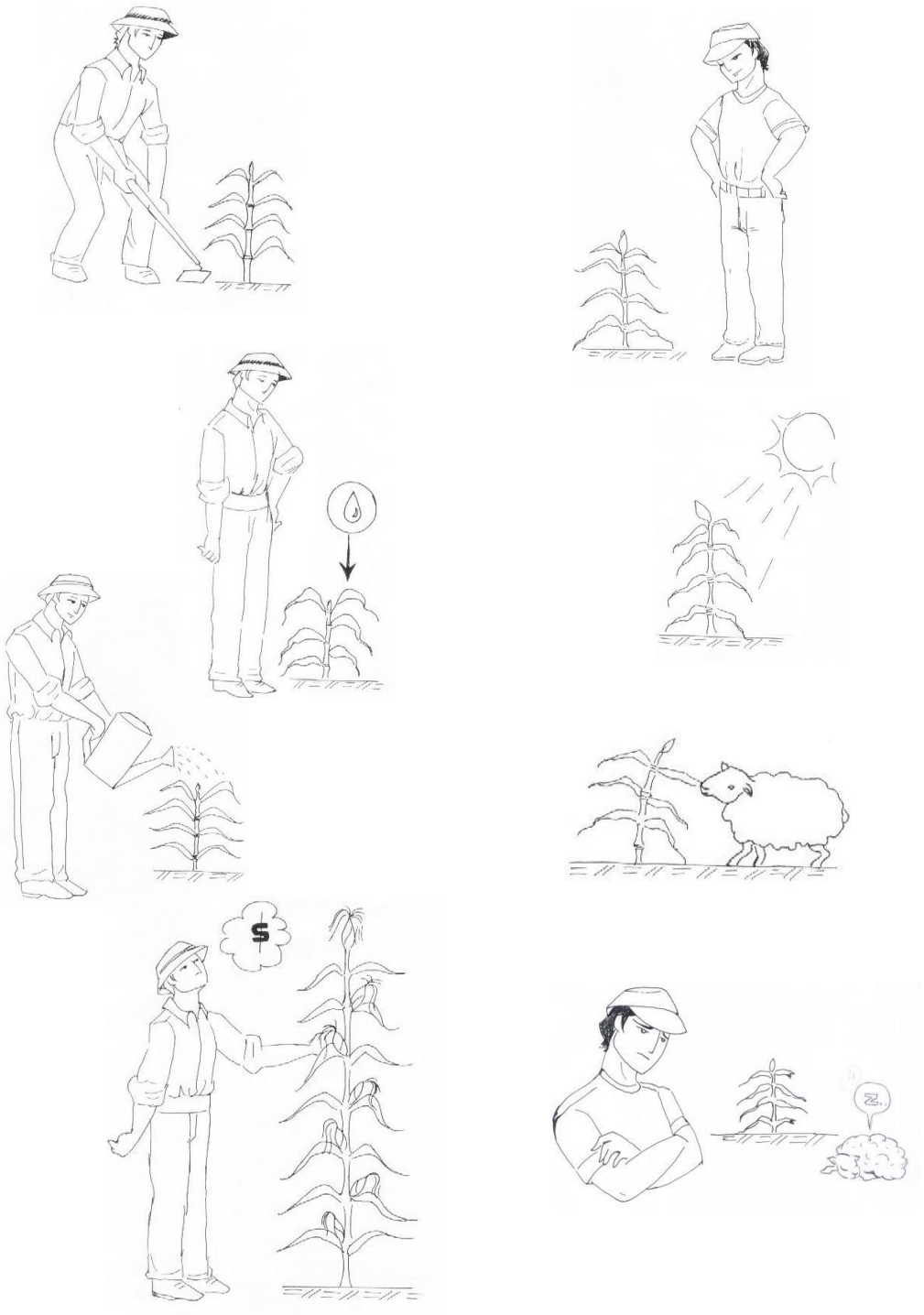
Appendix 4. Drawings used to conceptualize SEP

Appendix 4. 3 Drawing for the Chaco Region called "The Piggy Bank"

EL CHANCHITO ALCANCÍA

Appendix 4. 4 Drawing for the Chaco Region called "The Yielding Maize"

EL MAÍZ RENDIDOR

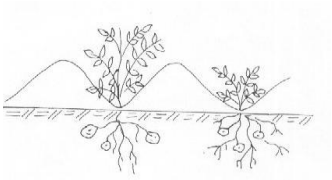


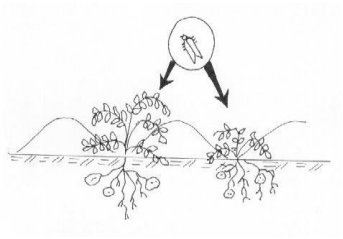
Appendix 4. 5 Drawing for the High Lands called "The Producing Cow"

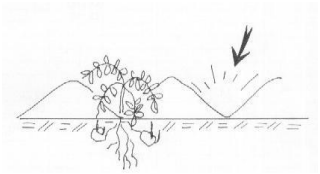
LA VAQUITA PRODUCTORA

Appendix 4. 6 Drawing for the High Lands called "Bags full of potatoes"

COSTALES LLENOS DE PAPA







Appendix 5. Detailed results on Agency and Structure

Appendix 5. 1 Perception of influence expressed by individuals regarding themselves inside the community

Region	Perception of influence	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	A lot	Frequency	17	8	25	9	10	19
		%	53,1%	30,8%	43,1%	27,3%	35,7%	31,1%
	Some	Frequency	4	3	7	15	13	28
		%	12,5%	11,5%	12,1%	45,5%	46,4%	45,9%
	Very Little	Frequency	9	9	18	1	2	3
		%	28,1%	34,6%	31,0%	3,0%	7,1%	4,9%
	None	Frequency	2	6	8	8	3	11
		%	6,3%	23,1%	13,8%	24,2%	10,7%	18,0%
	Total by Region	Frequency	32	26	58	33	28	61
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Yacuiba	A lot	Frequency	6	2	8	6	9	15
		%	30,0%	11,1%	21,1%	23,1%	33,3%	28,3%
	Some	Frequency	9	2	11	6	7	13
		%	45,0%	11,1%	28,9%	23,1%	25,9%	24,5%
	Very Little	Frequency	2	9	11	11	10	21
		%	10,0%	50,0%	28,9%	42,3%	37,0%	39,6%
	None	Frequency	3	5	8	3	1	4
		%	15,0%	27,8%	21,1%	11,5%	3,7%	7,5%
	Total by Region	Frequency	20	18	38	26	27	53
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Appendix 5. 2 Perception of influence expressed by individuals regarding themselves outside the community

Region	Perception of influence	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	A lot	Frequency	1	0	1			
		%	4,2%	0,0%	2,4%	0,0%	0,0%	0,0%
	Some	Frequency	4	5	9	3	1	4
		%	16,7%	27,8%	21,4%	10,0%	3,8%	7,1%
	Very Little	Frequency	4	0	4	2	8	10
		%	16,7%	0,0%	9,5%	6,7%	30,8%	17,9%
	None	Frequency	15	13	28	25	17	42
		%	62,5%	72,2%	66,7%	83,3%	65,4%	75,0%
	Total by Region	Frequency	24	18	42	30	26	56
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Yacuiba	A lot	Frequency	1	0	1			
		%	9,1%	0,0%	4,5%	0,0%	0,0%	0,0%
	Some	Frequency	4	0	4	4	3	7
		%	36,4%	0,0%	18,2%	25,0%	25,0%	25,0%
	Very Little	Frequency	1	0	1	4	3	7
		%	9,1%	0,0%	4,5%	25,0%	25,0%	25,0%
	None	Frequency	5	11	16	8	6	14
		%	45,5%	100,0%	72,7%	50,0%	50,0%	50,0%
	Total by Region	Frequency	11	11	22	16	12	28
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Appendix 5. 3 Access to communication

Region	Access to communication	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	No Access	Frequency	3	3	6	4	2	6
		%	8,1%	10,0%	9,0%	12,1%	7,1%	9,8%
	Some Access	Frequency	33	27	60	23	25	48
		%	89,2%	90,0%	89,6%	69,7%	89,3%	78,7%
	High Access	Frequency	1	0	1	6	1	7
		%	2,7%	0,0%	1,5%	18,2%	3,6%	11,5%
	Total by Region	Frequency	37	30	67	33	28	61
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Yacuiba	No Access	Frequency	1	2	3	0	1	1
		%	5,0%	10,5%	7,7%	0,0%	3,7%	1,9%
	Some Access	Frequency	9	10	19	11	11	22
		%	45,0%	52,6%	48,7%	40,7%	40,7%	40,7%
	High Access	Frequency	10	7	17	16	15	31
		%	50,0%	36,8%	43,6%	59,3%	55,6%	57,4%
	Total by Region	Frequency	20	19	39	27	27	54
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Appendix 5. 4 Access to transportation

Region	Access to transport	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	No Access	Frequency	25	21	46	31	27	58
		%	67,6%	70,0%	68,7%	93,9%	96,4%	95,1%
	Intermediate Access	Frequency	11	9	20	2	1	3
		%	29,7%	30,0%	29,9%	6,1%	3,6%	4,9%
	High Access	Frequency	1	0	1			
		%	2,7%	0,0%	1,5%	0,0%	0,0%	0,0%
	Total by Region	Frequency	37	30	67	33	28	61
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Yacuiba	No Access	Frequency	7	7	14	13	15	28
		%	35,0%	36,8%	35,9%	48,1%	55,6%	51,9%
	Some Access	Frequency	10	9	19	13	10	23
		%	50,0%	47,4%	48,7%	48,1%	37,0%	42,6%
	High Access	Frequency	3	3	6	1	2	3
		%	15,0%	15,8%	15,4%	3,7%	7,4%	5,6%
	Total by Region	Frequency	20	19	39	27	27	54
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Appendix 5. 5 Size of land holding

Region	Size of land holding (ha)	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	4 and more	Frequency	32	25	57	30	23	53
		%	86.5%	83.3%	85.1%	93.8%	82.1%	88.3%
	2 to 3.99	Frequency	4	3	7	1	5	6
		%	10.8%	10.0%	10.4%	3.1%	17.9%	10.0%
	Up to 1.99	Frequency	1	2	3	1	0	1
		%	2.7%	6.7%	4.5%	3.1%	0.0%	1.7%
	Total by Region	Frequency	37	30	67	32	28	60
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yacuiba	4 and more	Frequency	3	4	7	18	18	36
		%	15.0%	21.1%	17.9%	66.7%	72.0%	69.2%
	2 to 3.99	Frequency	10	9	19	5	3	8
		%	50.0%	47.4%	48.7%	18.5%	12.0%	15.4%
	Up to 1.99	Frequency	7	6	13	4	4	8
		%	35.0%	31.6%	33.3%	14.8%	16.0%	15.4%
	Total by Region	Frequency	20	19	39	27	25	52
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Appendix 5. 6 Systems of Land Tenure

Region	Systems of Land Tenure	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Owned	Frequency	35	30	65	31	28	59
		%	94,6%	100,0%	97,0%	96,9%	100,0%	98,3%
	Rented	Frequency	1	1	2	1	0	1
		%	2,7%	3,3%	3,0%	3,1%	0,0%	1,7%
	Division of Production	Frequency	5	2	7	0	1	1
		%	13,5%	6,7%	10,4%	0,0%	3,6%	1,7%
Yacuiba	Owned	Frequency	18	17	35	23	21	44
		%	90,0%	89,5%	89,7%	85,2%	84,0%	84,6%
	Rented	Frequency	5	3	8	7	6	13
		%	25,0%	15,8%	20,5%	25,9%	24,0%	25,0%
	Division of Production	Frequency	3	0	3	3	1	4
		%	15,0%	0,0%	7,7%	11,1%	4,0%	7,7%

Appendix 5. 7 Proportion of families reporting having irrigated land

Region	Land condition	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Irrigated	Frequency	16	10	26	9	9	18
		%	43,2%	33,3%	38,8%	28,1%	32,1%	30,0%
	Non Irrigated	Frequency	21	20	41	23	19	42
		%	56,8%	66,7%	61,2%	71,9%	67,9%	70,0%
	Total by Region	Frequency	37	30	67	32	28	60
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Yacuiba	Irrigated	Frequency	5	6	11	6	7	13
		%	25,0%	31,6%	28,2%	22,2%	28,0%	25,0%
	Non Irrigated	Frequency	15	13	28	21	18	39
		%	75,0%	68,4%	71,8%	77,8%	72,0%	75,0%
	Total by Region	Frequency	20	19	39	27	25	52
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Appendix 5. 8 Type of tools and equipment owned for agricultural production

Region	Type of tools and equipment	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Basic	Frequency	37	30	67	31	27	58
		%	100.0%	100.0%	100.0%	93.9%	96.4%	95.1%
	Intermediate	Frequency	21	16	37	21	15	36
		%	56.8%	53.3%	55.2%	63.6%	53.6%	59.0%
	Advanced	Frequency	0	0	0	0	0	0
		%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total by Region	Frequency	37	30	67	33	28	61
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yacuiba	Basic	Frequency	20	19	39	27	26	53
		%	100.0%	100.0%	100.0%	100.0%	96.3%	98.1%
	Intermediate	Frequency	18	6	24	22	18	40
		%	90.0%	31.6%	61.5%	81.5%	66.7%	74.1%
	Advanced	Frequency	4	1	5	1	1	2
		%	20.0%	5.3%	12.8%	3.7%	3.7%	3.7%
	Total by Region	Frequency	20	19	39	27	27	54
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Appendix 5. 9 Levels access or possession of durable goods by families

Region	Access to durable goods	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Low	Frequency	34	30	64	31	27	58
		%	91,9%	100,0%	95,5%	93,9%	96,4%	95,1%
	Intermediate	Frequency	3	0	3	2	1	3
		%	8,1%	0,0%	4,5%	6,1%	3,6%	4,9%
	High	Frequency	0	0	0	0	0	0
		%	0,0	0,0	0,0	0,0	0,0	0,0
	Total by Region	Frequency	37	30	67	33	28	61
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Yacuiba	Low	Frequency	16	16	32	17	21	38
		%	80,0%	84,2%	82,1%	63,0%	77,8%	70,4%
	Intermediate	Frequency	4	3	7	10	6	16
		%	20,0%	15,8%	17,9%	37,0%	22,2%	29,6%
	High	Frequency	0	0	0	0	0	0
		%	0,0	0,0	0,0	0,0	0,0	0,0
	Total by Region	Frequency	20	19	39	27	27	54
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Appendix 5. 10 Level of income in relation to national minimum salary

Region	Relation to minimum salary	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	≤ 1	Frequency	31	25	56	33	28	61
		%	83.8%	83.3%	83.6%	100.0%	100.0%	100.0%
	> 1 ≤ 2	Frequency	4	4	8			
		%	10.8%	13.3%	11.9%	0.0%	0.0%	0.0%
	> 2 < 4	Frequency	2	1	3			
		%	5.4%	3.3%	4.5%	0.0%	0.0%	0.0%
	Total by Region	Frequency	37	30	67	33	28	61
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yacuiba	≤ 1	Frequency	8	10	18	12	15	27
		%	40.0%	52.6%	46.2%	44.4%	55.6%	50.0%
	> 1 ≤ 2	Frequency	8	8	16	6	7	13
		%	40.0%	42.1%	41.0%	22.2%	25.9%	24.1%
	> 2 < 4	Frequency	4	1	5	9	4	13
		%	20.0%	5.3%	12.8%	33.3%	14.8%	24.1%
	≥ 4	Frequency				0	1	1
		%	0.0%	0.0%	0.0%	0.0%	3.7%	1.9%
	Total by Region	Frequency	20	19	39	27	27	54
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Appendix 5. 11 Membership status in an agricultural related organization considered important for the family

Region	Agricultural Organization Membership	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Is member	Frequency	12	4	16	11	11	22
		%	32.43%	13.33%	23.88%	33.33%	39.29%	36.07%
	Is Not member	Frequency	25	26	51	22	17	39
		%	67.57%	86.67%	76.12%	66.67%	60.71%	63.93%
	Total by Region	Frequency	37	30	67	33	28	61
		%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Yacuiba	Is member	Frequency	13	9	22	15	9	24
		%	65.00%	47.37%	56.41%	55.56%	33.33%	44.44%
	Is Not member	Frequency	7	10	17	12	18	30
		%	35.00%	52.63%	43.59%	44.44%	66.67%	55.56%
	Total by Region	Frequency	20	19	39	27	27	54
		%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Appendix 5. 12 Perceived benefits from agricultural related organization considered important for the family in Qhayanas

Region	Perception of Benefits	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Perceives no benefit	Frequency	4	0	4	4	5	9
		%	33.3%	0.0%	25.0%	36.4%	45.5%	40.9%
	Perceives benefit	Frequency	8	4	12	7	6	13
		%	66.7%	100.0%	75.0%	63.6%	54.5%	59.1%
	Total by Region	Frequency	12	4	16	11	11	22
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yacuiba	Perceives no benefit	Frequency	3	2	5	7	4	11
		%	23.1%	22.2%	22.7%	46.7%	44.4%	45.8%
	Perceives benefit	Frequency	10	7	17	8	5	13
		%	76.9%	77.8%	77.3%	53.3%	55.6%	54.2%
	Total by Region	Frequency	13	9	22	15	9	24
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Appendix 5. 13 Perception of solidarity

Region	Level of Solidarity	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	High	Frequency	0	0	0	1	0	1
		%	0,0%	0,0%	0,0%	3,1%	0,0%	1,7%
	Intermediate	Frequency	2	4	6	20	9	29
		%	5,4%	13,3%	9,0%	62,5%	32,1%	48,3%
	Non Existent	Frequency	35	26	61	11	19	30
		%	94,6%	86,7%	91,0%	34,4%	67,9%	50,0%
	Total by Region	Frequency	37	30	67	32	28	60
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Yacuiba	High	Frequency	0	0	0	2	8	10
		%	0,0%	0,0%	0,0%	9,5%	34,8%	22,7%
	Intermediate	Frequency	10	9	19	15	10	25
		%	50,0%	47,4%	48,7%	71,4%	43,5%	56,8%
	Non Existent	Frequency	10	10	20	4	5	9
		%	50,0%	52,6%	51,3%	19,0%	21,7%	20,5%
	Total by Region	Frequency	20	19	39	21	23	44
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Appendix 5. 14 Processes of leadership election

Region	Leadership election process	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Committee appointment	Frequency	1	1	2	0	0	0
		%	8,3%	25,0%	12,5%	0,0%	0,0%	0,0%
	Everyone takes a turn	Frequency	2	0	2	1	2	3
		%	16,7%	0,0%	12,5%	9,1%	18,2%	13,6%
	Collective agreement	Frequency	2	0	2	1	0	1
		%	16,7%	0,0%	12,5%	9,1%	0,0%	4,5%
	Open election	Frequency	5	2	7	9	8	17
		%	41,7%	50,0%	43,8%	81,8%	72,7%	77,3%
	Secret votation	Frequency	0	1	1	0	1	1
		%	0,0%	25,0%	6,3%	0,0%	9,1%	4,5%
	Other	Frequency	2	0	2			
		%	16,7%	0,0%	12,5%	0,0%	0,0%	0,0%
	Total by Region	Frequency	12	4	16	11	11	22
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Yacuiba	No formal leaders	Frequency				2	1	3
		%	0,0%	0,0%	0,0%	13,3%	11,1%	12,5%
	Committee appointment	Frequency				2	2	4
		%	0,0%	0,0%	0,0%	13,3%	22,2%	16,7%
	Everyone takes a turn	Frequency				1	0	1
		%	0,0%	0,0%	0,0%	6,7%	0,0%	4,2%
	Collective agreement	Frequency				1	0	1
		%	0,0%	0,0%	0,0%	6,7%	0,0%	4,2%
	Open election	Frequency	10	8	18	8	4	12
		%	76,9%	88,9%	81,8%	53,3%	44,4%	50,0%
	Secret votation	Frequency	3	1	4	1	2	3
		%	23,1%	11,1%	18,2%	6,7%	22,2%	12,5%
	Total by Region	Frequency	13	9	22	15	9	24
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Appendix 5. 15 Perception of leadership and decision making

Region	Leadership style	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Leader decides and informs	Frequency	1	0	1	0	0	0
		%	8,3%	0,0%	6,3%	0,0%	0,0%	0,0%
	Leader consults and decides	Frequency	4	1	5	2	3	5
		%	33,3%	25,0%	31,3%	18,2%	27,3%	22,7%
	Members discuss and decide	Frequency	7	3	10	9	8	17
		%	58,3%	75,0%	62,5%	81,8%	72,7%	77,3%
	Total by Region	Frequency	12	4	16	11	11	22
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Yacuiba	Leader decides and informs	Frequency	0	0	0	2	2	4
		%	0,0%	0,0%	0,0%	13,3%	22,2%	16,7%
	Leader consults and decides	Frequency	1	0	1	0	1	1
		%	7,7%	0,0%	4,5%	0,0%	11,1%	4,2%
	Members discuss and decide	Frequency	12	9	21	13	6	19
		%	92,3%	100,0%	95,5%	86,7%	66,7%	79,2%
	Total by Region	Frequency	13	9	22	15	9	24
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Appendix 5. 16 Perception of the existence of payments for organizational membership

Region	Existence of Membership Payments	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Yes	Frequency	4	2	6	3	3	6
		%	33,3%	50,0%	37,5%	27,3%	27,3%	27,3%
	Not Known	Frequency	0	1	1	1	4	5
		%	0,0%	25,0%	6,3%	9,1%	36,4%	22,7%
	No	Frequency	8	1	9	7	4	11
		%	66,7%	25,0%	56,3%	63,6%	36,4%	50,0%
	Total by Region	Frequency	12	4	16	11	11	22
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Yacuiba	Yes	Frequency	10	3	13	9	5	14
		%	76,9%	33,3%	59,1%	60,0%	55,6%	58,3%
	Not Known	Frequency	0	2	2			
		%	0,0%	22,2%	9,1%	0,0%	0,0%	0,0%
	No	Frequency	3	4	7	6	4	10
		%	23,1%	44,4%	31,8%	40,0%	44,4%	41,7%
	Total by Region	Frequency	13	9	22	15	9	24
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Appendix 5. 17 Knowledge of organization formality status

Region	Formality status of organization	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	No formal establishment	Frequency	9	3	12	9	5	14
		%	75,0%	75,0%	75,0%	81,8%	45,5%	63,6%
	Not aware	Frequency	1	1	2	1	2	3
		%	8,3%	25,0%	12,5%	9,1%	18,2%	13,6%
	Formal establishment in progress	Frequency	2	0	2			
		%	16,7%	0,0%	12,5%	0,0%	0,0%	0,0%
	Formally established	Frequency				1	4	5
		%	0,0%	0,0%	0,0%	9,1%	36,4%	22,7%
	Total by Region	Frequency	12	4	16	11	11	22
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Yacuiba	No formal establishment	Frequency	13	2	15	8	4	12
		%	100,0%	22,2%	68,2%	53,3%	44,4%	50,0%
	Not aware	Frequency	0	1	1	4	2	6
		%	0,0%	11,1%	4,5%	26,7%	22,2%	25,0%
	Formal establishment in progress	Frequency	0	2	2	2	2	4
		%	0,0%	22,2%	9,1%	13,3%	22,2%	16,7%
	Formally established	Frequency	0	4	4	1	1	2
		%	0,0%	44,4%	18,2%	6,7%	11,1%	8,3%
	Total by Region	Frequency	13	9	22	15	9	24
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Appendix 5. 18 Farmer perception on the existence of linkages between the producer organization and other organizations

Region	Perception of Linkages	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Yes, linkages are perceived	Frequency	9	2	11	4	5	9
		%	75,0%	50,0%	68,8%	36,4%	45,5%	40,9%
	No, linkages are not perceived	Frequency	3	2	5	7	6	13
		%	25,0%	50,0%	31,3%	63,6%	54,5%	59,1%
	Total by Region	Frequency	12	4	16	11	11	22
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Yacuiba	Yes, linkages are perceived	Frequency	13	4	17	9	4	13
		%	100,0%	44,4%	77,3%	60,0%	44,4%	54,2%
	No, linkages are not perceived	Frequency	0	5	5	6	5	11
		%	0,0%	55,6%	22,7%	40,0%	55,6%	45,8%
	Total by Region	Frequency	13	9	22	15	9	24
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Appendix 5. 19 Farmer perception on the articulation of the producer organization with a 2nd level organization

Region	Second-level organization	Unit	2008		Total 2008	2011		Total 2011
			Participants	Non-participants		Participants	Non-participants	
Ayllu Qhayanas	Is part of a 2nd Level organization	Frequency	8	4	12	4	5	9
		%	66,7%	100,0%	75,0%	36,4%	45,5%	40,9%
	Is not part of a 2nd Level organization	Frequency	4	0	4	7	6	13
		%	33,3%	0,0%	25,0%	63,6%	54,6%	59,1%
	Total by Region	Frequency	12	4	16	11	11	22
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Yacuiba	Is part of a 2nd Level organization	Frequency	11	3	14	7	3	10
		%	84,6%	33,3%	63,6%	46,7%	33,3%	41,7%
	Is not part of a 2nd Level organization	Frequency	2	6	8	8	6	14
		%	15,4%	66,7%	36,4%	53,3%	66,7%	58,3%
	Total by Region	Frequency	13	9	22	15	9	24
		%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Appendix 6. Detail of variables used for the data analysis

PERCEPTION OF EMPOWERMENT

Opportunity

Opportunity in Development services

OpD = ∑ Question 60A (1,2,3,4)

Rank 0-2, >2-5, >5

Opportunity in Agricultural Services

OpAg = ∑ Question 60B (5,6,7,9,10,15)

Rank 0-4, >4-8, >8

Opportunity in Agricultural and Development Services

OpAnD = ∑ Question 60D (5,6,7,9,10,15)

Rank 0-4, >4-8, >8

Opportunity in Market Linkages

OpML= ∑ Question 60C (1,2,3,4,5,6,7,9,10,15)

Rank 0-6, >6-13, >13

Praxis

Praxis in Agriculture and Development

Question 35

Praxis in Development

Question 40

Outcome

Outcome in Agriculture and Development

Question 36

Outcome in Market Linkages

Question 41

AGENCY AT THE INDIVIDUAL LEVEL

PSYCHOLOGICAL ASSETS (Self-esteem and self-worth)

Question 24

INFORMATION ASSETS

Communication

IAc = ∑ Question 59 (1+2+3+4)

Where Yes =1, No =0

Rank 0, 1-2, 3-4

Access to transportation

IAt = ∑ Question 59 (8+9)+ Question 60 (15)

Where Question 59 (8): Yes =1, No =0

Question 59 (9): Yes =2, No =0

Question 60: No, never =0 ; Difficult Access = 1; Accessible = 2

MATERIAL ASSETS

Land Size = Question 61

System of land tenure = Question 62

Holding of irrigated land = Question 63

Tool ownership

Question 58

Access to durable godos

Question 59

Financial Assets

Question 69

AGENCY AT THE COLLECTIVE LEVEL

Membership in organizations

Questions 2 and 3

Benefits from organizations

Question 14

Types of benefits perceived

Question 15

Collective action in agriculture (Mobilization and Leadership)

Questions 33 and 34

Collective action in market linkages (Mobilization and Leadership)

Questions 37 and 38

Perception of Solidarity

Rp = ∑ (Question 27 + Question 32)

Question 27	Question 32
1. Contrata = (0) 2. Recibe Ayuda = (1) 3. Otro = (1)	1. Siempre = (3) 2. De vez en cuando = (2) 3. A veces = (1) 4. Difícil = (0)

Reciprocity Experience

Re = ∑ (Question 28* Question 29) + (Question 30* Question 31)

Question 28	Question 29	Question 30	Question 31
1. Si = (-1) 2. No = (0)	1. Una = (4) 2. Dos = (3) 3. Mes = (2) 4. Critico = (1) 5. Otro = (1)	1. Si = (-1) 2. No = (0)	1. Una = (4) 2. Dos = (3) 3. Mes = (2) 4. Critico = (1) 5. Otro = (1)

<u>STRUCTURE</u>

Leadership Election

Question 12

Style of Leadership and decision making

Question 14

Membership payments

Question 16

Formality status of the organization

Question 9

Development of linkages with other organizations

Question 8

Articulation with 2nd level organizations

Question 10